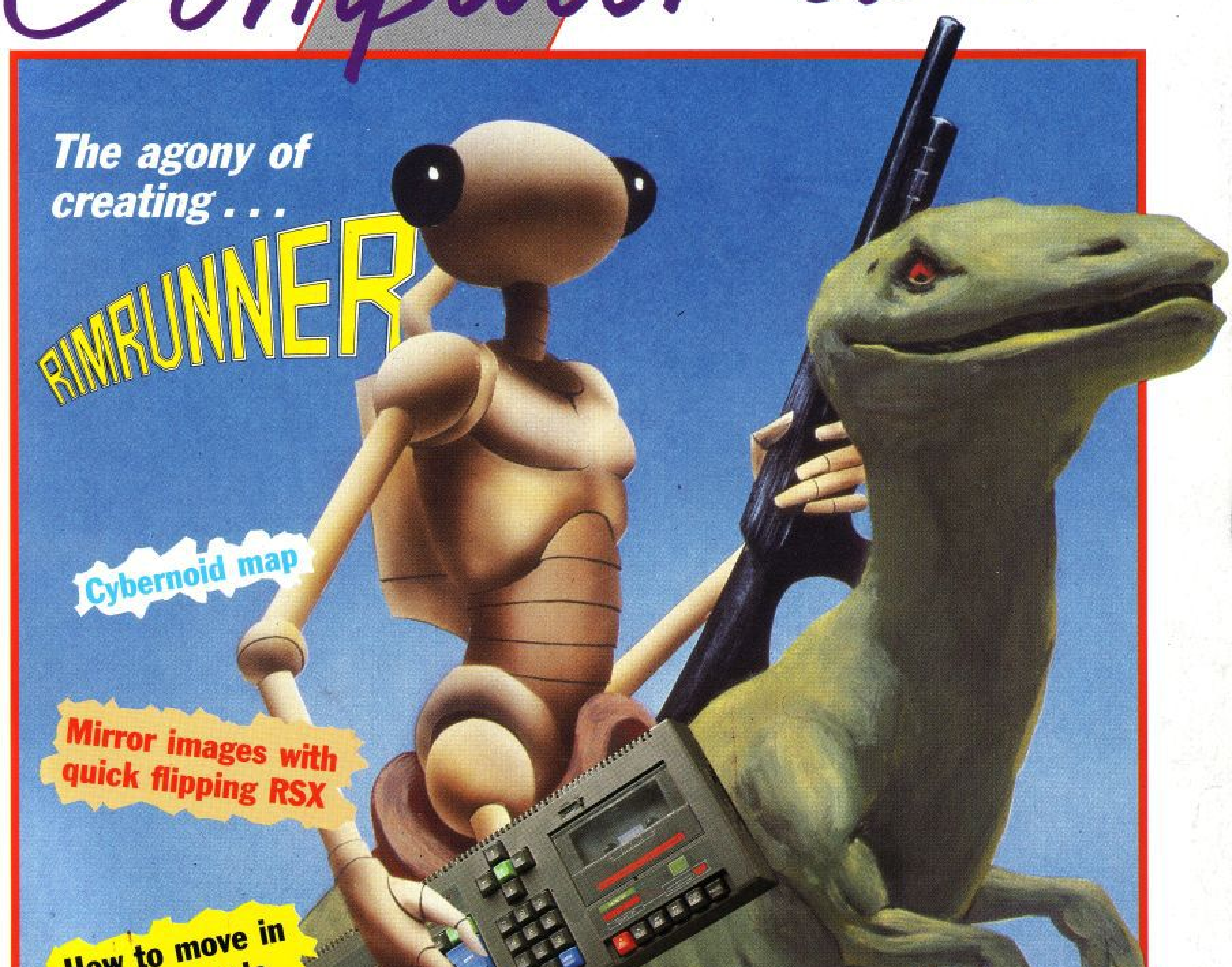
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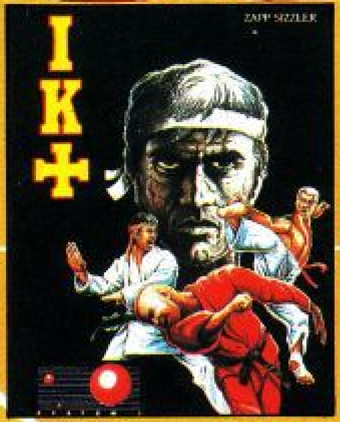
AMSTRAD Computer User

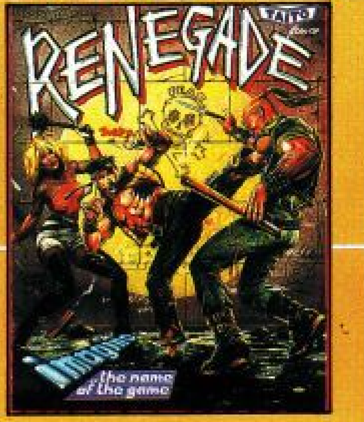


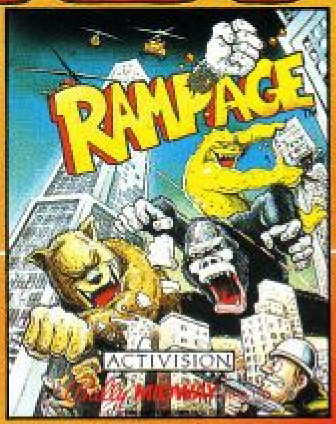
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WE ARE THE CHAMPIONS







IK+

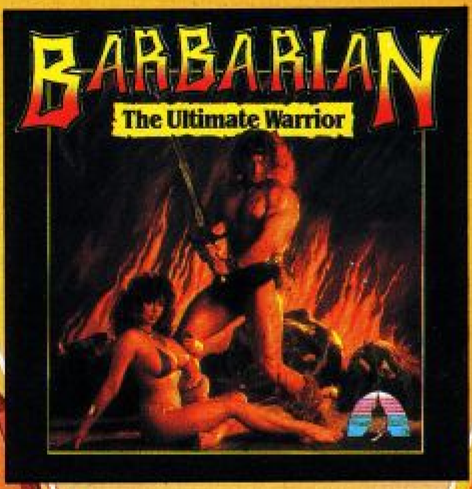
Call it a sequel...
And you'll land up flat on your back.
They called International Karate 'the greatest Karate beat 'em up yet' (Commodore User).
And who are we to argue?
But ARCHER MACLEAN has come up with a stunner: A third fighter. An amazing animated background. New moves (including double head-kick and a spectacular backflip). Re-mixed music by ROB HUBBARD.
And balls!

©1987 Archer Maclean ©1987 System 3 Software Ltd.

RAMPAGE

The game where the nice guys don't get a look in.
Grab your way through Chicago, punch up New York, and jump on San Francisco.
Three indescribably nasty characters which bear a remarkable likeness to King Kong, Godzilla and Wolf-man, need you to send them on a rampage in an enduring 150 days of destruction, through 50 different cities.

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BARBARIAN

THE STORY SO FAR...
The evil sorcerer Drax has sworn to wreak an unspeakable doom on the people of the Jewelled City unless Princess Mariana is delivered to him.
However, he has agreed that if a champion can be found who is able to defeat his demonic guardians, the Princess will be released.
From the wastelands of the North, comes an unknown barbarian, a mighty warrior, wielding his broadsword with deadly skill. .
Can he vanquish the forces of Darkness and free the Princess?
ONLY YOU CAN SAY...

©Palace Software 1987.



RENEGADE

In the knife-edge world of the vigilante there is no place to rest, no time to think – but look sharp – there is always time to die! From the city subways to the gangland ghettos you will always encounter the disciples of evil who's mission it is to exterminate the only man on earth who dares to throw down the guantlet in their path – the Renegade.
PLAY RENEGADE...PLAY MEAN!

Licensed from ©Taito Corp., 1986.

SUPER SPRINT

Licensed from Atari Games' original money-spinning coin-op, one or two players compete head-to-head over eight gruelling tracks and four levels of game difficulty. Avoid the hazards and collect golden spanners which can be traded for vehicle-enhancing custom car features – the key to Super Sprint. With detailed animation and sound effects, Super Sprint brings the best driving excitement ever to be experienced on home computers.

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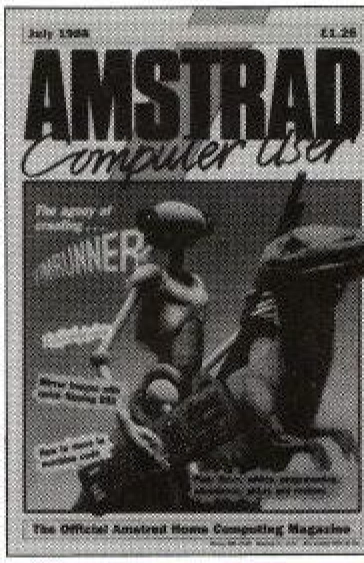
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AMSTRAD Computer User

The official magazine for Amstrad CPC users

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Adding to the fun and excitement of Arkanoid... All new features include exit choices to vastly increase the screen options, many extra "VAUS" effects, multiple shots and a secret additional alien to contend with. This adds up to the most thrilling reaction game since ARKANOID but with so many improvements you just won't be able to stop playing...
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NEWS

Computer User

Mandarin launch



Mandarin's Peter Holme, Mike Cowley and Chris Payne at their inscrutable best

LEE Ho Fook, in the heart of London's Chinatown, is perhaps the premier Chinese restaurant in the country. As such, Mandarin Software could not have chosen a more delicious – we mean prestigious – venue for its launch.

The setting was a large split-level sideroom off the main restaurant; the upper level accommodating a selection of micros running a selection of software and demos, the lower level accommodating the really important things like food, drink and the Amstrad CPC machine.

Spread liberally around the proceedings was the Mandarin team looking more like the cast of Fu Manchu meets The Wolfmen than a complement of software marketing executives.

Chinese moustache dangling beneath a hat that could shelter half a small village from rain, Chris Payne, Mandarin's marketing manager, told us excitedly of Mandarin's plans.

"No less than five well known software houses have linked up with Mandarin," he said, "Level 9, Bubble Bus, Powerhouse, Red Rat, and Jawx International of Paris".

They intend to release no more than ten to a dozen games a year. But these releases, Chris says, will be of the highest possible quality.

Amstrad CPC owners can already judge this quality for themselves. The Level 9 team have put together a Time and Magik trilogy of adventures that consists of enhanced versions of Lords of Time, Red Moon and The Price of Magik.

Mandarin classes the CPC in the "established" group of home computers. Although the vast majority of releases will have been developed on other computers, CPC conversions are promised.

Manchester-based Red Rat is currently developing Rally Run, which looks to be an excellent car rallying simulation and the first Bubble Bus game for Mandarin is Starquake, a rip roaring explore and shoot-'em-up.

The next adventure off the Level 9 assembly line will be Lancelot, a game based on past ages of chivalry when men were men and women got caught by the dragons and screamed a lot.

CPC price on hold

FEARS that the world shortage of dram chips might force up CPC prices appear to be groundless – at least for the time being.

Although Amstrad has increased the retail cost of its PCW and PC computers there are no similar moves planned for the CPC range.

A company spokesman told *Amstrad Computer User*: "It is because the CPC is selling in such large quantities that we have been able to keep down the cost to the end user. "We have no plans at present to increase the basic price of CPC machines, but should the dram shortage get worse we will have to review the situation".



New wide carriage printer

THE latest in the fast growing range of Amstrad printers is the IBM and Epson-compatible LQ5000 DI. It is a professional 24 pin dot matrix printer which produces output in the best letter quality at 96 cps, and draft quality at a rapid 288 cps.

Designed specifically for the many users of stationery up to 16 inches wide, the LQ5000 DI readily accepts paper in fanfold, cut sheet and roll paper format.

It is fed either by the belt tractor drive or friction feeder.

Both a serial and a parallel interface are included in the £399 + VAT price tag.

Time and magik

The trilogy



Interactive fiction from Level 9







Screen shots from Atari ST version

Three of Level 9's most acclaimed adventures – Lords of Time, Red Moon and The Price of Magik – come together in one package. Each has been enhanced and enlarged with more text than ever before – 60,000 mind-expanding words creating magik and mystery round every corner. There's a powerful new parser, and most disc versions include stunning digitised pictures that help to dramatically heighten the atmosphere.

What the press have said:

LORDS OF TIME: ***"Destined to become a classic"*** – *Computing with the Amstrad.*

RED MOON: ***Best Graphical Adventure or Best Adventure of the Year*** – *Zzap 64, Crash, Amtix, C&VG, CCI, and Amstrad Computer User.*

THE PRICE OF MAGIK: ***"Another superb adventure . . . their best yet"*** – *Commodore User. Also a Crash Smash.*

Spectrum (cassette) Plus 3 (disc)
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Amstrad CPC (cassette or disc)
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MANDARIN SOFTWARE

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Available from all good stockists or order direct by sending a cheque or postal order made payable to Mandarin, together with your name and address. Price includes P&P. Access/Visa owners: Phone our hotline or send your card number with your order.

It's a Goodie

PRINCE Charles is right, you don't have to be a sandal-wearing hippy to care about the environment.

On March 30 the electronic magazine Micronet proved it by using the latest technology to promote the conservation cause when it interviewed Bill Oddie by computer. Bill, former Goodie, is Vice President of the British Trust for Conservation Volunteers.

"Prince Charles hit the nail on the head", agreed Oddie, "when he said conservationists need a more up-to-date image.

"Events like this interview with Micronet are an excellent example of how we are using today's technology to help preserve the environment".



Oddie will be answering questions sent in via home computers from Micronet's 25,000 nationwide users. In particular, he will be promoting the Trust's campaign, launched after last October's storms in the South East, to plant a million new trees.

Micronet is raising funds for the BTCV by running a competition to win tree-inspired prizes.

All proceeds from the event will be going to the Emergency Tree Fund.

Training courses

THOMPSON Computers of Peterborough has released two training courses for Protext.

The courses are available on disc for you to use at home or the office at your own pace.

The first course, on mail merge, includes coverage of setting up a list of names and addresses, how to merge them into documents, printing labels and selective mail merging.

The second course is for advanced use of Protext.

Both courses are available now on PCW and CPC6128 using Protext CP/M+, and the mail merge course is also available for CPC users of Protext and Promerge. Each course costs £16.50 on disc.

New release round up

● *Beyond the Ice Palace, from Elite, is a magical game of fantasy which tells of the battle between good and evil. Your quest is to rid the forest of the evil spirits and return the land to peace and normality.*

Many goblins and strange creatures must be overcome on your travels as you strive to remain alert at all times. Written by Dave Perry, author of Trantor, Beyond the Ice Palace should be worth waiting for. Price £9.99 tape, £14.99 disc

● *Coming soon from Hewson, blasting aliens from the earth and the skies when it gets here, will be Battlecar Marauder.*

Variable intensity lasers seer through the battlefield, winder missiles skim low overhead, Molotov cocktails explode to your left and right.

Battlecar Marauder is the vertical scrolling invention of Glaswegian Mark Kelly, with spectacular graphics from ace author Steve Crow, complemented by virtuoso battle music from Barry Leitch and Dave Rodgers. Battlecar Marauder will probably be priced at Hewson's usual £9.99 tape, £14.99 disc.

● *A real-life outdoor pursuit simulation with a difference is being worked on by Gremlin Graphics. Roller skating is the pastime, and Skate Crazy is the game.*

As every streetwise kid knows, the only way to succeed is to gain street cred from your friends and onlookers. The ideal venue for such a venture is Gremlin's scrolling map of a multi-storey car park.

You must buzz around on your skates performing daredevil stunts such as leaping from ramps, 360 degree turns, barrier jumps and skating backwards.

Skate Crazy has an extra dimension – a completely separate interfacing game can be played on side B. Locations such as the underground subways must be skated along in this different challenge.

● *Also new from Gremlin Graphics is Blood Brothers. The game is based around two brothers, Hark and Kren, from the distant planet Sylonia which is rich in minerals.*

In recent times their planet has been plundered by a hostile race, the Scorpians.



Blood Brothers action

These nortinasties stole a large quantity of precious gems from Sylonia and it is now the responsibility of Hark and Kren to recover them from the Scorpians' planet.

Both have very manoeuvrable jet-bikes fitted with laser bolt weapon units. The bikes help them to travel overland, while their thrust-packs and handheld lasers can be used when they enter the mine.

Blood Brothers costs £9.99 tape, £14.99 disc.

● *Professional BMX Simulator from Code Masters is the world's first ever simultaneous four player computer game.*

It is an enhanced development of BMX Simulator, holder of the record for the number of consecutive weeks (over 70) in the UK computer games chart.

The enhancements to Professional BMX include having standard and then expert versions of the game.

There are five dirtbiking courses, and a second cassette contains five quarry racing and five desert riding courses.

Professional BMX Simulator is being converted to the CPC by the famed Oliver twins, Britain's best selling computer games authors in 1987. Look out for it soon on the Code Masters Plus label priced £4.99 tape.

ROMANTIC ROBOT *present*

1988 - THE YEAR OF THE ROBOT

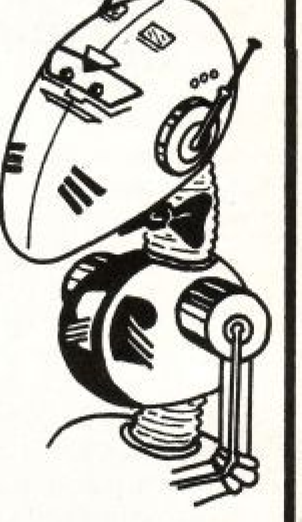


Q: WELL, I'VE HEARD OF THE YEARS OF THE CAT, PIG, AND EVEN DRAGON – BUT THE YEAR OF THE ROBOT?

A: Absolutely! And ROMANTIC ROBOT wish to make 1988 a truly memorable year (if not us, who will?). To kick off with, there is an INTRODUCTORY OFFER OF **£29.88** ON RODOS, plus a truly unique 1988 SPRING MAIL ORDER PRICE OF MULTIFACE TWO – **£42.88!**

Q: I LOVE SALES. BUT WHAT'S SO LIKEABLE ABOUT RODOS and MULTIFACE?

A: RODOS is too powerful and complex to be summed up here – please send a SAE for full info. MULTIFACE is (simply) a MUST for ANY CPC owner: it can copy and change programs as you wish.



Q: OH, DO I NEED TO DO ANY PROGRAMMING TO MAKE BACK-UPS?
A: NO! – NOT with the MULTIFACE TWO – it is in fact the ONLY product on the market which works FULLY AUTOMATICALLY. You LOAD any program as usual, RUN it for as long as you like and when you wish to make a copy you just press the MULTIFACE's red button and follow the menu and on-screen instructions.

Q: HOW DOES IT WORK THEN? IS IT EASY? USER-FRIENDLY? ERROR-TRAPPED? IDIOT PROOF? GUARANTEED?
A: YES! It works a treat and it could not be easier. The menu gives four basic options – to **SAVE** a program, to **RETURN** to continue it, to **JUMP** (say to your own routines – invaluable for hackers) and **TOOL** to access the MULTI-TOOLKIT set of built-in utilities. For example pressing **S** to **SAVE** will first allow you to **NAME** the back-up and then let you save a **PROGRAM** or just a **SCREEN** to **TAPE** or **DISK**. Before the saving itself, MULTIFACE compresses the program so that it takes the least amount of space on tape/disk and will re-load as quickly as possible. Once a program is saved, you can **RETURN** or **JUMP**, use the **TOOLKIT** to change it, **SAVE** it again, etc.

Q: DON'T YOU CORRUPT THE SCREEN WITH YOUR MENU, INSTRUCTIONS, PULL DOWN WINDOWS, ETC.?
A: NO. MULTIFACE TWO has its own memory (8K ROM & 8K RAM) and a lot more hardware – thus when it finishes its job or when you re-load your back-ups, everything is **FULLY** and **AUTOMATICALLY** restored: screen modes, colours, windows, etc. This is essential and NO OTHER DEVICE CAN DO IT!

***Q: OK, SO MULTIFACE CAN COPY FROM* TAPE TO DISC, *BUT CAN IT DO* TAPE TO TAPE *OR* DISC TO DISC *OR* DISC TO TAPE?**
A: Of course it can. MULTIFACE saves either to tape or disc and it saves whatever happens to be in the computer at that time – no matter how you loaded it in.

Q: SO FAR SO GOOD. BUT CAN'T I DO ALL THIS WITHOUT THE MULTIFACE?
A: ABSOLUTELY NOT! First, you need a hardware device, a "magic box", to be able to stop and copy programs AT ANY STAGE – be it upon loading, half-way through the game, etc. Tape/disc copiers can only try to copy programs BEFORE they load: if there are unorthodox loaders, speedlocks, protections against copying, etc., you'll end up with a problem – but not with a back-up. Also, with MULTIFACE you can poke infinite lives, ammunition, etc. – and then SAVE.

Q: MULTIFACE IS NOT THE ONLY 'MAGIC BOX' ON THE MARKET – WHY SHOULD I BUY IT MORE THAN ANYTHING ELSE?
A: There are four devices on the market. Action Reply by Datel Electronics, Disc Wizard by Evesham Micros, Mirage Imager and MULTIFACE TWO. Each manufacturer would naturally argue his product is the best buy – fortunately (for you and us), MICRONET recently compared all four units and MULTIFACE TWO came out the best in literally all respects: the most successful one – 100%!, the ONLY AUTOMATIC ONE, the FASTEST ONE both in LOADING *AND* SAVING time, the one taking the LEAST ROOM when saving – and you still get a couple of EXTRAS: a RESET button and an extensive and unique MULTI-TOOLKIT.

Q: MULTIFACE IS IT! THE RIGHT THING IN THE RIGHT TIME! IF ONLY IT PAID FOR ITSELF...
A: But it does! By the time you buy 8 programs on tape instead of disc, you will have saved £40.– the cost of the MULTIFACE. The money you save on further programs is all yours
.... **MULTIFACE ✱ worth every penny, saves you pounds!**

Romantic RObot Disc Operating System

Just one ROM will turn your CPC into a professional set-up: With RODOS you can attach additional disc drives – 40/80 track, single/double sided and store more than 800k per disc.

RODOS NEW

But RODOS is in fact much more than a fast and perfect DOS. RODOS also gives you RANDOM ACCESS, PRINTER BUFFER, full ROM manager, SILICON DISC, altogether 54 new bar commands, enormous power – all this and much more for £29.88 only!

multiface two

SPRING MAIL ORDER SALE PRICE £42.88

RODOS

INTRODUCTORY OFFER-ON ROM £ 29·88

The special price of £42.88 applies strictly to mail orders received with the coupon below before the 30th June, 1988

Tape-to-disk at the touch of a button. Ridiculous, you may say, but it works every time. *Multiface* can stop any program in its tracks and save the program from memory to either tape or disk. It's completely foolproof. Similar products have had problems with screen size, colour and even sound; *Multiface* can handle all these without a second thought.

That alone would have satisfied many people, but Romantic Robot has gone one step further, incorporating a memory editor. No program is safe with this: everything is out in the open, including the Z80 registers, CRTC data and any part of memory.

Don't be fooled into thinking this will result in mass piracy, however. The *Multiface* unit itself must be plugged into your Amstrad to allow reloading of a program it saved.

Multiface II must be the cleverest hardware device at present – a necessity for disk owners who thought they were stuck with loading from tape every time.

AMSTRAD ACTION JANUARY 1987

THE YEAR OF THE ROBOT · BE PART OF IT

I order MULTIFACE 2 (£42.88) ☐ / RODOS (£29.88) ☐ plus p&p UK £1, Europe £2, Overseas £3

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It's a fair cop

THE editorial views of ACU concerning tape to disc copiers are well known, and a boring old subject too. Your reply (April) to Keith Kent, "you ... don't need to buy any of the illegal programs for copying software", has caused a few raised eyebrows. Nemesis are one of the two advertisers who have long offered such programs for sale in *ACU*, and your comments are clearly directed at us.

I strongly suspect you meant that such programs can be used for making illegal copies, rather than the copying programs are themselves illegal. The latter is not the case, nor can one have an opinion on matters of strict legality. If they were indeed illegal then questions arise concerning aiding and abetting, compounding felonies and so on.

Can I make it clear that Nemesis do not condone piracy, however affected. We do also market programs that are not related to copying.

I'll follow the usual letter requirement of telling you my impressions of *ACU*. Until recently it was the crummiest magazine available for CPC users. However, the offerings of real computer users,





Jeff Walker and Pat Winstanley, in your pages have livened things up somewhat.

Colin F. Harris,
Prop Nemesis.

***LD:** The articles you highlight were commissioned as a result of last year's survey. There is another one this month. You've only yourself to blame if you don't fill it in. We've been able to squeeze more into each magazine since January when we reduced the size of the type to get about 30 per cent more onto each page.*

Lost emission

ALEX McClure (May 1988) may be able to solve the problem with his monitor more cheaply than he thinks.

The usual problem with ageing, fading televisions and monitors is that the electron guns in the tube have "lost emission", which is to say their cathodes don't produce enough electrons.

Emission can often be restored by overunning the heater filaments for a short period. As this can also result in blown filaments and a useless tube it is best left to someone who knows what they are doing.

I suggest Mr McClure asks at his local TV repair shops. From the sound of it, he has little to lose.

Mike Brown
Anfield.

Send your letters to:
Lance Davis
Letters Editor
Amstrad Computer User
169 Kings Road, Brentwood
Essex CM14 4EF

Tar for telling us

I JUST came to the end of Army Moves when it printed "Now go on to Navy Moves" on the screen. This is misleading because you cannot buy it. I rang Imagine who said they were wondering whether to release it or not.

I hope this has comforted all the other people who have finished this game.

S.Khan,
Twickenham.

***LD:** Well spotted, SK. Just for that I'm sending you Cybernoid to finish.*

Down under upgrade

I HAVE a 464 with DDI-1 disc drive, DMP-2000 printer, SSA-1 speech synthesiser, Dart scanner and LP-1 light pen. If I upgrade my computer by fitting the 6128 Basic rom, will all these peripherals still work correctly?

I realise I would also need the DK'tronics ram and a 6128 user guide from?

In New Zealand we now receive ACU by air freight and so usually get it in the month of issue. Can we now enter all those wonderful competitions you hold?

I think your new look mag is really great. Thanks for all your help.

Chris Frakes,
Howick, New Zealand.

***LD:** Yes, all your add-ons will still work. Yes, you will have a 6128. Contact your Amstrad distributor concerning all the bits: Grandstand Computers Ltd, 21 Great South Road, Newmarket, Auckland.*

As for the competitions, yes of course you can enter them, but if the prize is something like a chocolate cake, we are not going to air freight something that's fragile.

Harsh and negative

I WRITE with reference to the review of our Small Traders Pack which appeared in the April issue.

In our opinion, it was quite apallingly one-sided and biased against our product. Mr Foster seems to have missed the whole point somehow. His report cannot go unchallenged and we therefore request the right to reply.

The Small Traders Pack is intended as an antidote to all those highbrow accounts packages which practically require a degree both in computer and business studies to comprehend. Our customers, as well as other reviewers, seem to appreciate the value for money and simplicity which our approach offers.

The review fails to mention any of the software's good points; the impression given is that there are none, apart from grudging praise for the well written manual.

In fact vital information such as debtor and



SOFTWARE THAT'S HARD TO BEAT

TASWORD 6128

The Word Processor — with Mail Merge

The established, powerful word processor for the Amstrad CPC 6128. TASWORD 6128 has been specifically developed to use 64K of memory as text space. This means a text file can be a massive 60,000 characters in length, enough room for over 10,000 words!
Featuring all standard and many extra word processing facilities TASWORD 6128 incorporates sophisticated print options, on-screen help, notepads, user definable keys allowing commonly used words, sentences or paragraphs to be typed with a single keypress and a powerful built-in data merge facility.
Extensive customisation facilities allow many of the facilities to be changed for personal requirements and saved into the program.
By combining power with ease of use TASWORD 6128 is the complete word processor for the CPC 6128. **Disc £24.95**

TASWORD 464-D

The Word Processor — with Mail Merge

The TASWORD especially developed to utilise the capabilities of the CPC 464 and 664 disc drives. Additional facilities include a larger text file size and automatic on-screen disc directories during save and load operations.
A major feature is the data merge facility. Mail merge, in which a letter is printed any number of times, each individually addressed to a different person, is just one application of this powerful facility. TASWORD 464-D is supplied on, and only runs on, disc.
Disc £24.95

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Your 464 becomes a professional standard word processor with TASWORD 464. Supplied complete with a comprehensive manual and a cassette which contains both the program and TASWORD 464 TUTOR. This teaches you word processing using TASWORD 464. Whether you have serious applications or simply want to learn about word processing, TASWORD 464 and the TUTOR make it easy and enjoyable.
Cassette £19.95

TASWORD UPGRADES

TASWORD 464 and Amsword owners: send your original cassette or disc (not the packaging) as proof of purchase and £13.90. Your original will be returned together with TASWORD 464-D or TASWORD 6128 on disc.

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The Screen Copier
for the CPC 6128, 664 and 464

A suite of fast machine code screen copy software for the CPC computers. Print high resolution screen copies in black and white and also large "shaded" copies with different dot densities for the various screen colours. TASCOPY can also print "poster size" copies — screen copies printed onto two or four sheets can be cut and joined to make the poster. **Disc £12.90 Cassette £9.90**

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The Sign Maker
for the CPC 6128 and PCW

Produce and print your own signs, posters, banners and large notices to get your message across with maximum impact.
A complete sign making package including four distinctive lettering styles, character heights from one inch to the full width of the paper, italics, underlining, borders, eight shading patterns, variable letter spacing, automatic kerning and line centering.
Signs may be printed across the paper or along the length of the paper to produce large eye-catching banners and notices.
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NEW!

TAS-SIGN — additional fonts

Two new, impressive fonts for TAS-SIGN, the sign maker: ROMAN a clear, classical font and HOBART, a bold and imposing typeface.
Disc £12.50

TAS-SPELL

The Spelling Checker

Spelling mistakes and typing errors spoil any document whether it's a private letter or your latest novel. With TAS-SPELL you are free to be creative in the confident knowledge that your spelling won't let you down.
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creditor reports, customer statements, stock re-order listings etc are available easily, both on screen and printer.

Invoice data is posted directly to the sales ledger and is also used to compile statements automatically as opposed to the hours it would take to prepare this data manually.

But then Mr Foster is not concerned with time. After all, he is quite happy to press 255 keys when only one is required to enter an option! If he really thinks that small traders have time to spare doing that sort of thing then he knows nothing about running a business.

We accept that some of the criticisms of the early version reviewed were justified. In an effort to make the package as easy as possible to operate I think we did over simplify certain aspects. That's why in the current version we have improved the VAT handling to cater for three separate rates and the delete option has been replaced by a start new period routine.

The invoicer now produces credit notes as well as invoices (optionally auto-numbered) and statements. In general, program presentation has been greatly enhanced and all main and sub menu options are now by single keypress. Only vital routines such as quit program are on double press.

Error checking and colour control has also been improved but we make no apologies for using all three modes at various times, why else are they available but to offer some contrast? Why should a business program always be boring to look at?

Just the other day we had a telephone call from a gentleman who had seen our software in action on the CPC and was so impressed with it's effectiveness that he virtually begged us to produce a version for the PCW.

He had previously bought an accounts package costing almost £200 and found it practically impossible to use. The documentation was incomprehensible and after the program reached a certain point it just hung. When he contacted the software house for support, he was told that the 60 day warranty period had elapsed and he would have to pay £80 extra for help.

In contrast, we provide free advice and offer cheap updates to valued old customers. All they need do is return the original disc plus £5 to receive the latest version. The point I am making is that our software offers an inexpensive and practical solution for automating a small business.

The self-styled elitists of the industry won't like it because a) it breaks the price barrier and b) it cuts through the mystique of business computing. They prefer expensive, complex systems which demand and thus preserve their expertise.

Some software houses boast that this or that package was designed by accountants. The result, quite often, is that only accountants can operate such programs. Like computer experts, they tend to use a jargon all of their own.

Of course the software has to be correct from an accounting and VAT view point. We have worked very hard on this aspect to the extent that our ledgers now produce VAT summaries for both the optional cash accounting scheme and/or cash/credit trading. Many expensive systems do not.

Let me end by saying that we realise our programs are not perfect. None are, however costly they may be. Our policy is to improve our products with regular updates, including the best suggestions received from customer feedback.

We are one of the very few software producers who are offering real business programs for the small but worthwhile CPC market. We plan to continue doing so as long as is viable. However, our cause is not helped or encouraged by the sort of harsh and negative review which appeared in your magazine.

S.Denson,
SD Microsystems

LD: *We stand by our review, and wonder whether you keep your own accounts on your own software.*

Wobbly Arnold

I HAVE a 464 and have recently noticed that some of my software has started to crash on loading. The motor seems to be suffering from slight speed fluctuations. How can I rectify the problem?

I.K.Gee,
Redhill, Surrey.

LD: *Contact your local dealer, or if you want to fix it yourself, all the bits are available from CPC. Phone them on 0772 555034.*

No books in Doncaster

I OWN a CPC 464 and am a newcomer to the world of Amstrad computing. I would like to know where I can buy a book of programs for this computer as I have tried all the shops in Doncaster.

Andrew Davies,
Doncaster.

Did *you try the butcher's*

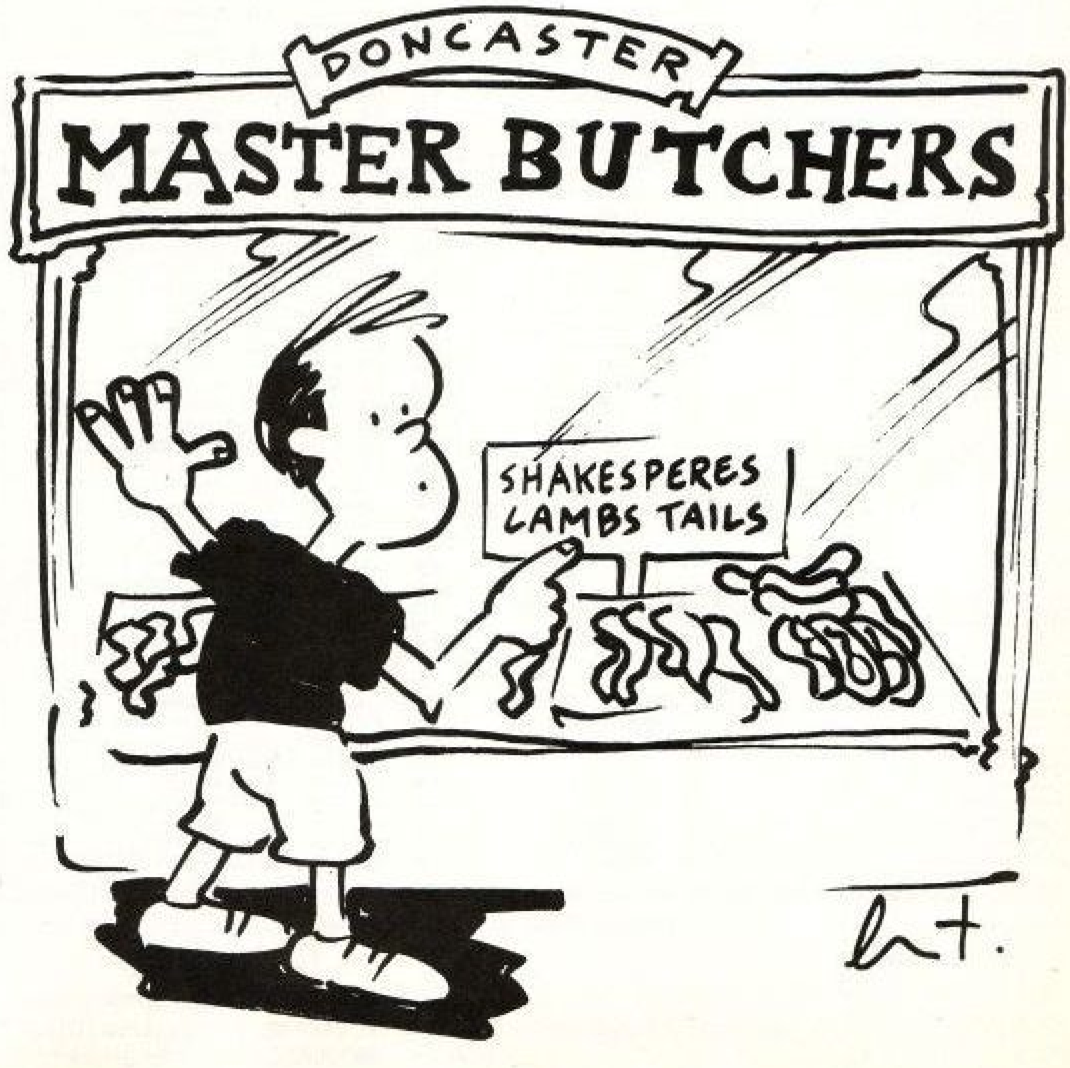
Seriously, there must be over 100 books written about the CPC by now. If it's listings you want, there's a book called Sixty Programs for the Amstrad CPC 464 published by Pan at £5.95. Write to Pan at: Pan Books (CS Dept), P.O.Box 40, Basingstoke, Hants.

Wasted pennies

I HAVE just bought your issue for April 1988. I own an Amstrad PCW8256 and usually buy your sister magazine for the PCW.

Flicking through the the April *ACU* I noticed what appeared to be a number of interesting articles together with an interesting game for typing in.

Imagine my disappointment when I got home to discover that the magazine, articles, letters,



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Master Disk	-	-	12.99	11.69
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Master of Universe (Movie)	9.99	8.99	14.99	13.49
Matchday 2	8.95	8.06	14.95	13.46
Mega Apocalypse	9.99	8.99	14.99	13.49
Mercenary	9.95	8.96	-	-
Mecenary Comp	-	-	19.95	17.96
Metrocross	9.99	8.99	14.99	13.49
Miami Vice	8.95	8.06	-	-
Mindshadow	9.99	7.99	14.99	11.99
Miss Gen/Bomscape	-	-	6.99	6.29
Mission Omega	9.95	8.96	-	-
Monopoly	9.95	8.96	14.95	13.46
Movie	8.95	8.06	-	-
Mystery of Arkham Manor	8.95	8.06	-	-
N-E-X-O-R	-	-	14.95	13.46
Nemesis the Warlock	8.95	8.06	-	-
Nigel Mansells Grand Prix	9.95	8.96	14.99	13.49
Ninja Hamster	8.95	8.06	14.95	13.46
Nodes of Yesod	8.95	8.06	-	-
North Star	9.99	8.99	14.99	13.49
Nosferatu The Vampire	9.95	8.96	-	-
Out of this World	9.99	8.99	14.99	13.49
Paperboy	8.95	8.06	14.95	13.46
Passengers on the Wind 2	9.95	8.96	14.95	13.46
Pawn	-	-	19.95	17.96
Pegasus Bridge	12.95	11.66	17.95	16.16
Planetfall	-	-	24.99	22.49
Power Plays	9.99	8.99	-	-
President	-	-	7.99	7.19
Prohibition	9.95	8.96	14.95	13.46
Ramparts	9.99	8.99	14.99	13.49
Renegade	8.95	8.06	14.95	13.46
Road Runner	9.99	8.99	14.99	13.49
Saboteur 2	7.95	7.16	11.95	10.76
Scalextric	9.95	8.96	14.95	13.46
Scrabble	9.95	8.96	14.95	13.46
Seastalker	-	-	24.99	22.49
Sentinel	9.95	8.96	14.95	13.46
Side Walk	9.95	8.96	14.95	13.46
Silent Service	9.95	8.96	14.95	13.46
Silicon Dreams	14.95	13.46	19.95	17.96
Sir Lancelot	8.95	7.16	-	-
Slap Fight	8.96	8.06	14.95	13.46
Solid Gold	9.99	8.99	19.99	17.99
Sorcerer Lord	12.95	11.66	17.95	16.16
Space Harrier	8.95	8.06	14.95	13.46
Spitfire 40	9.95	8.96	13.95	12.56
Star Games 2	9.99	8.99	-	-
Stargilder	14.95	13.46	19.95	17.96
Strike Force Harrier	9.95	8.96	14.95	13.46
Summer Gold Compendium	9.99	8.99	-	-
Super Sprint	9.99	8.99	14.99	13.49
Suspect	-	-	24.99	22.49
Suspended	-	-	24.99	22.49
Sword and Sorcery	9.95	8.96	14.95	13.46
Tai Pan	8.95	8.06	14.95	13.46
They Sold a Million	9.95	8.96	14.95	13.46
They Sold a Million 2	9.95	8.96	14.95	13.46
They Sold a Million 3	9.95	8.96	14.95	13.46
They Stole a Million	9.99	8.99	-	-
Thrust 2/Parabula	-	-	6.99	6.29
Thrust/Ninja Master	-	-	6.99	6.29
Thundercats	9.95	8.95	14.95	13.45
Tobruk	9.95	8.96	9.95	8.96
Tomahawk	9.95	8.96	14.95	13.46
Top Gun	8.95	8.06	14.95	13.46
Trantor	9.99	8.99	14.99	13.49
Trivial Baby Boomer	14.95	13.46	19.95	17.96
Trivial Genius Edit	14.95	13.46	19.95	17.96
Trivial Young Edit	14.95	13.46	19.95	17.96
Ultima Ratio/Gunstar	-	-	6.99	6.29
Vulcan	9.95	8.96	-	-
Warlock	8.95	8.06	-	-
Winter Games	9.95	8.96	14.95	13.46
Wishbringer	-	-	24.99	22.49
Wizball	8.95	8.06	14.95	13.46
Wonderboy	9.99	8.99	14.99	13.49
World Class L Board	9.99	8.99	14.99	13.49
World Games	9.99	8.99	14.99	13.49
Yie Ar Kung Fu	8.95	8.06	-	-
Zork 2	-	-	24.99	22.49

CPC Educational Software

Animal/Veg/Mineral	9.95	8.96	14.95	13.46
Answer Back Junior Quiz	9.95	8.96	13.95	12.56
Better Maths (12-16)	9.95	8.96	14.95	13.46
Better Spelling (9-14)	9.95	8.96	14.95	13.46
Biology (12-16)	9.95	8.96	14.95	13.46
Chemistry (12-16)	9.95	8.96	14.95	13.46
Factfile 500	4.95	4.46	8.95	8.06
Fun School5-8's	5.95	5.36	8.95	8.06
Fun School 8-12's	5.95	5.36	8.95	8.06
Fun School Under 5's	5.95	5.36	8.95	8.06
Geography Quiz (10+)	9.95	8.96	14.95	13.46
Happy Letters	9.95	8.96	14.95	13.46
Happy Numbers	9.95	8.96	14.95	13.46
Happy Writing	9.95	8.96	14.95	13.46
Magic Maths (4-8)	9.95	8.96	14.95	13.46
Maths Mania (8-12)	9.95	8.96	14.95	13.46
Maxi Maths (9-14)	9.95	8.96	14.95	13.46
Physics (12-16)	9.95	8.96	14.95	13.46
Playschool (3-7)	9.95	8.96	14.95	13.46
The French Mistress	16.95	15.26	19.95	17.96
The German Master	16.95	15.26	19.95	17.96
The Italian Tutor	16.95	15.26	19.95	17.96
The Spanish Tutor	16.95	15.26	19.95	17.96
Weather/Climate (12-17)	9.95	8.96	14.95	13.46
Wordhang	9.95	8.96	14.95	13.46
World Wise	9.95	8.96	14.95	13.46

Send for catalogue of over 3,000 Titles for Amstrad CPC/PCW/PC, Commodore, Spectrum, Atari, Atari ST, BBC, MSX, Electron, Apple series 2/Apple Macintosh Computers all at Discount Prices. All prices include VAT, Post & Packaging UK only. Export orders welcome.

COMSOFT

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Coldstream Computer Centre, 48 Duke Street, Coldstream, Berwickshire TD12 4LF Shop open Mon-Sat 9.30-12.00 & 1.00-5.30. Tel.: 0890 2979. 24 hour Order Service on 0890 2854

games, Ads and all, are intended for the CPC user, despite your statement on page 3 that this is "The official magazine for all users of Amstrad computers".

It would help new Amstrad owners to find the right magazine for their machine if you state clearly on the front cover that ACU is for CPC users, as you do for the PCW (not to mention the wasted pennies!).

A.H.Bedford,
Wivenhoe, Essex

LD: *Point taken. We're making the necessary changes.*

Shake, rattle and scroll

ONCE when I typed in a magazine listing which was supposed to scroll a ball around the screen I had to switch my computer off PDQ because it was making the disc drive make the most awful noises.

Scrolling in Basic is quite remarkably slow. All my efforts in machine code have interesting results; as often as not the computer crashes. Do you know any simple, fairly smooth, fairly fast scrolling routines?

David Horniblow,
Reading.

LD: *Back in June 1987 we published Justin's Scroll, the ultimate in CPC sideways scrolling. It gave you the knowhow to create parallax effects – the example being a message scrolling quickly in front of a slowly scrolling background.*

Smooth, yes. Fast, yes. Simple, definitely not. Ah well, two out of three isn't bad.

Wipe out

IN reply to Peter Steers (May) re. the Hitachi drive, I have the same setup myself and must admit that I too had similar problems. I found that I was wiping out the directory each time I tried to use the drive. However, after much head scratching I found out that all my troubles were caused by having the interconnecting cable the wrong way up at one end.

I think all Peter needs to do is unplug the IDC connector at either end of the cable and turn it over.

Can a second drive be driven from the in-built power supply in the colour monitor?

Jim Murray,
Bingham, Notts.

LD: *The answer to your question is probably yes, but you are on your own. You do so at your own risk as it is "outside the spec" as they say.*

Not made in Britain

WHEN looking through April's ACU I find that you say the MP2 is better than the MP1. In what ways?

Spencer Jung,
Harlow, Essex.

LD: *Apart from the fact that the MP2 includes a power supply for the 6128 disc drive, it also has much better video circuitry (it wasn't made in Britain, the MP1 was).*

Frustrated Welshman

Although I have taken *ACU* for three years now, I am becoming increasingly frustrated.

The Hairy Hacker used to be interesting, now it's just a list of pokes which could be clearer and take up less space if printed as such.

The Cage Page surely must be of extreme minority interest and is akin to overhearing someone else's telephone conversation. Devoting three pages to that is but a space filler.

Most Amstrads were purchased some time ago, therefore most are not beginners, but I agree that Basic programming, especially of the more advanced kind, is useful.

I think that what is required is something new to do with your computer, not a rehash of articles that have appeared over and over again in various forms for years.

The Hairy Hacker should revert to his previous style and really do some hacking. Things like Multiface do exist, so how about some advice on how to use them effectively?

Hardware projects – I know you would be stepping on a few companies' toes, but who are you there to serve? What about simple output ports to control external devices. RS232 interfaces, 8 bit printer port, a Midi interface, a cheap light pen? I remember a BBC magazine once had a hardware project to build a Multiface type device.

Assembly Point was a good series – why has it stopped? Let's have more machine code. Why not a step-by-step guide to writing a multiscreen game? How to program a scrolling landscape? How to program sprites that pass in front of some things and behind others? Above all, lets not go back to hex and binary explanations and how to write text on the screen.

Come on *ACU* – it's getting dull

Colin Naylar,
Cardigan

LD: *Amstrad User has to cater for all levels of ability. The machines are still selling well so there are plenty of new users. Cage Page was dropped a couple of months ago. Using a Multiface is not hacking, it's pressing a button on a black box.*

The hardware projects we have run were not that popular. There is a new, and very good, machine code series. We have had a step-by-step guide to writing a multi screen game. We have had an article on how to scroll the screen and one on software sprites. I can't remember anything on hex to binary.

Don't contradict yourself by asking for these things and not wanting re-hashes ACU is a magazine for a majority. Your voting form is on Page 45.

Gotcha!

PLEASE find enclosed a stamped addressed envelope for a listing of the CP/M Virus program.

We thank you in anticipation of an early reply.

Alan McGregor
Customer Services Dept
Amstrad User Club

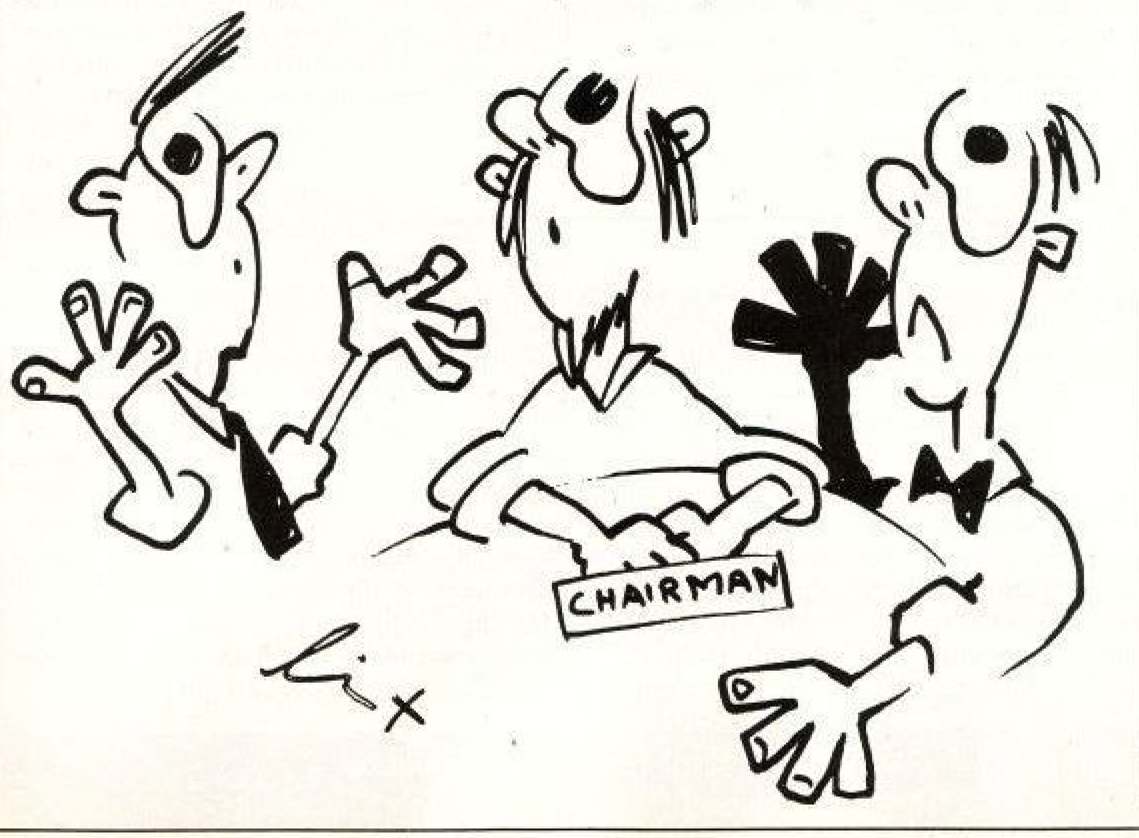
Praise at last

JUST a note re. More Expensive? by S Barker, (March). He should be so lucky, by the time the magazine reaches New Zealand we pay $7.50 n.z. for it.

I would not miss it, for the help and advice are great. I am 66+ years and have nothing but praise for the magazine. The only one I have not received since Oct/Nov 1984 was a foul up by the importers for Sept 1987, a matter I am endeavouring to correct.

Mrs J Butt,
Rotorua, New Zealand

LD: *You've made my month, Mrs Butt. Have a Sept 1987 issue on me.*



MUG

THE INDEPENDENT MicroLink User Group NEWSLETTER

Through the Gateway

Gateways are connections to other computers. MicroLink has a number of these, to British, European and American databases, and one which has come in for a bit of publicity recently is the USA-based Mnematics Videotex service.

This offers similar features to MicroLink, but as it's mostly used by American subscribers it is intriguingly different in style.

But the number of MicroLink subscribers using the gateway has made an impact. The UK SIG (Special Interest Group) has passed a message on to MUG commenting on this, and asking us for our ideas and reactions to the service.

They also have online parties; a number of subscribers get on line at the same time and use the Mnematics CHAT facility to discuss anything that seems worth talking about.

So if you've ever fostered a secret ambition to invade America, this might be just the way to do it.

Linkup

Most MicroLink members – even the active ones who regularly chat, mail and use the Bulletin Board (BB) – only know their fellow MicroLinkers as names and numbers. And most subscribers have questions and suggestions about the service, judging from the enthusiastic discussions on features and performance that pepper the BB.

So how about meetings, where users can get together in convivial surroundings and perhaps get to buttonhole a MicroLink official specially imported for the occasion? That's the idea behind the Linkups.

So far, volunteers have said they'll organise Linkups in Manchester, Birmingham and London. As everything is being sorted out on the BB, dates, times and venues are extremely flexible; as things become more definite they'll be published in Mugshot. And if the Linkups are as successful as they should be, they could well turn into regular events.

For the latest details on Linkups, mail MAG95816 or check on the board.

Umbrella organisation

Starting a small business is encouraged these days, but anyone going it alone for the first time soon discovers a huge range of problems – bureaucratic, financial and practical – which can sap the energy of even the keenest start-up.

ExpertLink is a new service aimed at both new and established businesses. Run along the lines of the bulletin board, it provides access to two teams of experts, one based at the University College of Swansea and the other based just about everywhere.

The first group consists of professors and lecturers with qualifications in a wide range of subjects from law to ergonomics. The second has an even wider base of experience – the MicroLink subscribers themselves. Many of these run small (and not so small) businesses, and have solved the problems themselves.

Subscribers can either post a question for public discussion or send it for confidential consideration by the UCS team. And anyone can volunteer answers, or pass on a useful contact name, or even offer a service themselves.

Quick!

Your tortoise is on fire. What do you do? This month has seen some more unusual bulletin board entries, some of which could conceivably solve your problem.

For owners of incandescent reptiles, either the Tortoise Trust (MAG36331) which has been offering advice and leaflets on the care of the beasts or the Merseyside Fire Museum (MAG-100518), which consists of keen fire engine enthusiasts, might sort things out.

Other ideas currently under discussion on the board are chess games via Email, a poetry corner, and genealogy with computers. Someone's even trying to sell their latest music album; while MicroLink has made nobody a rock star yet there's always the first time.

More mundane matters managed to get sorted out, like how to send mail to New Zealand or how to download software to an IBM PC. It just goes to show; all you have to do is ask.

Shots in the dark

This page of news has to be prepared weeks in advance of publication – an inherent problem with such archaic technology as ink and paper.

Things change fast on MicroLink. So a weekly MicroLink User Group newsletter is published on the system itself. This can reflect what's happening faster, as well as dealing with individual problems, provoking discussions (hopefully!) and giving updates on new features.

It's called Mugshot. Written by Rupert Goodwins (MAG95816) it's posted on the Bulletin Board (>BB) in the MUG category late on Sunday evening each week.

It's also sent via MicroLink/Telecom Gold electronic mail to a list of people who would rather get a copy mailed to them than use the BB. This also means that Telecom Gold users who aren't MicroLink subscribers can see what they're missing. Again, contact MAG95816 if you fall into the latter category.

Getting carried away

...is one of the reasons the Cambridge Computer Z88 has been so popular. A number of MicroLink subscribers either have one or are interested in the beast. And in the tradition started by Brian Vallot-Lewis' (MAG11357) Archimedes User Group, a Z88 group has started up on MicroLink.

This one's organised by Vance Burton. Everybody in the group keeps a list of all the other members, and the Email system makes it easy for anyone to send a request for help or a new discovery to everyone else.

And if nobody in the group can solve a particular problem, then as soon as Cambridge Computer comes up with the answer it can be distributed to everyone.

The Archimedes group has been doing great things since its inception. Discounts for members on a range of commercial software have been arranged, and contact made with several suppliers. It must also be the only nationwide discussion forum which is entirely free from commercial considerations; the only people making the news are the users themselves.

Suggestions of material for inclusion in the MUG Newsletter should be sent to Rupert Goodwins on MAG95816

!! NOW SPEEDTRANS PLUS HAS EVEN MORE TO OFFER !!

SPEEDTRANS PLUS2

For CPC 6128 (or 464/664 with DK Tronics 64K (or larger) Memory)
Once the program has been transferred to disc IT WILL RUN ON ANY PC.

SPEEDTRANS PLUS2 now handles the VERY LATEST Speedlock types automatically. No need to hold a key down at anytime during loading. SPEEDTRANS PLUS2 also saves 99% of opening screens and saves them in their full colours.

FULLY AUTOMATIC – JUST ONE KEYPRESS * ONLY ONE PROGRAM TO RUN WHICH FINDS THE SPEEDLOCK TYPE AUTOMATICALLY * WILL TRANSFER ORIGINAL AND MANY OF TODAYS SPEEDLOCK PROGRAMS * NO FIDDLING OR MEDDLING – WRITTEN WITH THE AMATEUR IN MIND * AUTOMATIC DISC FILENAMES * NO WASTED DISC SPACE – SAVES THE CORRECT AMOUNT OF GAME CODE * SAVES 99% OF OPENING SCREENS * SCREENS SAVED IN THEIR CORRECT COLOURS * COMPRESSES SCREEN CODE TO SAVE EVEN MORE DISC SPACE * FASTER LOADING TIMES FROM DISC BECAUSE OF SHORTER FILE LENGTHS

SPEEDTRANS PLUS2 transfers over 200 programs to Disc, some ot the latest it will do are MADBALLS, FREDDY HARDEST (both games) BASKET MASTER, MATCHDAY II, PHANTOM CLUB, GRYZOR (main program), SUPER HANG ON.

These latest Speedlock types can be identified by the whole screen flashing with horizontal bands of colour immediately after the first file has loaded. Do remember that **SPEEDTRANS PLUS2** does not save all the memory in the hope of having saved all the game. It saves exactly the right length of code. All screens are saved in compressed form – some as little as 4K (Basket Master) – thus saving even more disc space.

SPEEDTRANS PLUS2 is the most sophisticated Tape-to-Disc transfer utility for SPEEDLOCK protected programs ever published. It will certainly transfer more games than any other Speedlock transfer program on the market and with much greater ease. Other transfer programs require you to know how long the game code is so that you may run an alternative program for the long games which does not save the loading screen. This is done because they do not make use of the extra memory available on the CPC 6128 or from the use of and extra RAMPACK (DK Tronics 64K or greater.) This program is highly intelligent in that it first reads the loader from the tape and establishes which type of protection is in use from 6 alternatives. At the end of the load it then finds out how long the code is and if it is too long to be saved to one file it will move the excess code into the banked memory and save the game in two parts and write the appropriate loader program. The screen will also be moved into a bank and compressed before saving. This can mean screen files ans small as 4K (Basket Master) depending on mode and content. All this adds up to a lot less disc space being used than with other transfer programs and you will nearly always get the loading screen saved. The exception to this is when there is no loading screen (as in SCRABBLE) or when the screen is blanked out and more code is loaded into the screen memory, as in BMX SIMULATOR and MADBALLS for example. Try getting a screen with Multiface or any other imager. These imagers are only capable of saving what you have in memory at the time the button is pressed. What happens in multi part games? you have to press the button for each part thus wasting precious disc space. They also save far too much code and therefore waste even more space and saving too much code means longer loading times from disc. Programmers are now checking to see if you have an imager plugged in and if you have the program will not load. Imagers also have to be in place before you can reload your program and saved programs can only be reloaded in to the machine in which they are saved. **SPEEDTRANS PLUS2** creates totally stand-alone files and if you have another CPC even without extra memory they will run perfectly. It also displays the saving name on screen at the start of the load will all except the very latest games. In all cases the disc saving name is displayed while the save is carried out. To run the transferred game just RUN this name. Another intelligent feature of **SPEEDTRANS2** is that every first thing it does is to find out which drive it is in. This means that if you have a two drive system you may run the program from drive B by typing RUN "B:DISC" or B:RUN"DISC. However the saving will ALWAYS be to DRIVE A so with a single drive you must change the disc when prompted on screen

DISC:- UK £14.99 – EUROPE £16.25 – REST OF WORLD £17.00
Upgrade your SPEEDTRANS PLUS – send your disc together with: UK £2.00 – EUROPE £3.25 – REST OF WORLD £4.00
Upgrade your SPEEDTRANS TAPE send your tape together with: UK £12.00 – EUROPE £13.25 – REST OF WORLD £14.00

* LOW LOW PRICES * * LOW LOW PRICES * * LOW LOW PRICES *

ARNOR SOFTWARE

Program	UK – Disc	Eprom	Europe – Disc	Eprom	Rest of World – Disc	Eprom
Protext Office "NEW"	29.50	N/A	30.75	N/A	31.50	N/A
Protext Filer "NEW"	19.50	N/A	20.75	N/A	21.50	N/A
Protext	21.50	34.50	22.75	35.75	23.50	36.50
Prospell	19.50	29.50	20.75	30.75	21.50	31.50
Promerge (Rom=Promerge Plus)	19.50	29.50	20.75	30.75	21.50	31.50
Maxam "The Best"	21.50	34.50	22.75	35.75	23.50	36.50
Maxam 1 1/2 "NEW"	N/A	24.50	N/A	25.75	N/A	26.50
Utopia	N/A	24.50	N/A	25.75	N/A	26.50

PURCHASE THE ROMBO ROMBOARD AND WE WILL GIVE YOU A FURTHER £3.50 DISCOUNT ON EACH ROM PROGRAM

ROMBO ROMBOARD

UK – £31.00 EUROPE – £33.00 REST OF THE WORLD – £35.00

DMP 2000/2160/3000/3160

The printer buffer presently in the DMP 2000/3000 series is a 2K RAM. Most of this RAM is used by the printer's operating system leaving on average 1/2K as buffer space. Our upgrade kit contains a new static RAM chip which will increase the printer buffer by 6K (about 4 pages of text). This upgrade allows all Download Characters to be re-defined allowing the user to design special characters for use with scientific and other programs. The kit is supplied with full pictorial instructions to allow the amateur to carry out his own modification (the DMP2160 takes about 7 minutes). If you dont think you are up to it your local TV shop can do the job in approximately 15 minutes

UK £9.00 – EUROPE £10.25 R.of W. £11.00

FIRETRANS

This utility will transfer a number of FIREBIRD programs from tape to disc automatically including most opening screens in full colour. FIRETRANS will work equally will from tape but will be more convienient to use if converted to disc with SAMSON/Transmat. It will transfer WILLOW PATTERN, RUNESTONE, CHIMERA, GUNSTAR, PARABOLA, REALM, SPIKY HAROLD, BOOTY, DONT PANIC, GUNFRIGHT, STARGLIDER, NINJA MASTER, HELICOPTER, and some versions of THRUST, HARVEY HEADBANGER and BOMBSCARE.

TAPE:- UK £5.00 – EUROPE £6.25 R.of W. £7.00
DISC:- UK £8.50 – EUROPE £9.75 – R.of W. £10.50

NEW COMPACTOR NEW

COMPACTOR will allow you to load a standard 17K screen, set the mode, border and ink colours and then save it as a compressed screen containing its own mode and ink colour information. Most screens compact down to an average of 9K which is an enormous saving on disc space. Loading time of compressed screens is also proportionately reduced

TAPE:- UK £5.00 – EUROPE £6.25 R.of W. £7.00
DISC:- UK £8.50 – EUROPE £9.75 – R. of W. £10.50

FAST FORMATTER

The **FASTFOMATTER** will format one side of a disc in approx. 30 seconds with the choice of DATA, VENDOR or SYSTEM and its much easier than using your CPM disc.

TAPE:- UK £4.50 – EUROPE £5.25 – R. of W. £6.50
DISC :- UK £8.00 – EUROPE £9.25 – R.of W. £10.00

TRANSIT

TRANSIT is a disc-to-disc file copier which handles files upto 40K in length in one pass. It will copy from drives A-A, A-B, B-B and B-A making an ideal utility for use with 5 1/4" second drive.

TAPE:- UK £4.50 – EUROPE £5.25 – R. of W. £6.50
DISC :- UK £8.00 – EUROPE £9.25 – R.of W. £10.00

UTILITY DISC No. 1

This utility disc contains 5 programs, all menu driven. They are **SAMSON, TRANSIT, QCLONE, VIEWTEXT** and the fast disc **FORMATTER.**

DISC:- UK £15.50 – EUROPE £16.75 – R. of W. £17.50
ROM :- UK £17.25 – EUROPE £18.50 – R.of W. £19.25

3" PANASONIC DISC BOXES

Rumour has it that Amsoft/Panasonic no longer supply boxes with their discs. We have approx 1000 boxes remaining at 25 pence each. Regretfully we can only supply boxes if accompanied with a minimum order for Software/hardware of £15.00 unless extra monies are enclosed to cover postage

NEW NIRVANA NEW

Have you tried backing up your original expensive disc software and failed? Use NIRVANA before its too late! NIRVANA (meaning enlightenment) is an extremely powerful disc handling utility which has the following features: Disc to disc back-up copier which will handle most of the commercially protected discs available today. File copier for individual files. Disc formatter, much easier to use than CPM. Change file attributes. Erase files. Change filenames. Will handle all disc drive combination.

DISC:- UK £14.99 – EUROPE £16.25 – R. of W. £17.00

NEW SHAREPLAY NEW

THE STOCK MARKET SIMULATION
(ALL CPC's)

This is a serious educational program for 1 to 6 players and provides all the enjoyment of playing the stockmarket without any risk of personal bankruptcy!! Each player can buy and sell shares and the target is the first to reach £1,000,000. The program includes a stockholding portfolio listing the shares purchased, their number, cost and market value. Bank balances are also shown. Graphical representation of market fluctuations are given in the form of a bar graph. Also included is a high score table. Scores are automatically saved at the end of each session.

DISC:- UK £14.99 – EUROPE £16.25 – R. of W. £17.00

NEW WORDSEEK NEW

THE WORDSEARCH PROGRAM
(ALL CPC's)

This educational progam will tax even the most agile mind. The aim is to find the hidden words in a 15 by 15 puzzle within a set time limit of 30 seconds. The time limit is extended for every correct letter of the current word found. You may create your own puzzle consisting of up to 10 words which can be saved to disc and used at any time. You may only retain one puzzle at a time but if you choose not to use your own puzzle then the program will randomly select one from the library of 50 on the disc. All of the puzzles in the library are made up of 10 words each consisting of 1x8 letter, 1x7 letter 2x6 letter, 3x5 letter, 2x4 letter and 1x3 letter words. This ensures equal difficulty regardless which one is randomly loaded. The program contains a print option (for Epson compatible printers) allowing a hard copy to be made of any puzzle created. Keyboard/Joystick options are also available.

DISC ONLY:- UK £14.99 – EUROPE £16.25
REST OF THE WORLD £17.00

NEW TUNESMITH NEW

TUNESMITH is a simple to use sound utility which allows you to use the keyboard to play and record your tunes. No knowledge of music or Amstrad sound commands is required all you need to be able to do is whistle the tune you play or record. The octave and period of notes is variable and the program includes synthesiser and vibrato effects. **TUNESMITH** will save any tune as a basic file which can be RUN, CHAINED or MERGED into your own program

DISC :- UK £14.99 – EUROPE £16.25 R.of W. £17.00

SAMSON

SAMSON has been developed by us to transfer not only the normal programs but also many of todays where the code is much longer. **SAMSON** differs in many ways from other Tape-to-Disc utilities, the main differences being: * SAMSON retains original file suffixes (SAMSON. SCN will be saved as SAMSON . SCN) * Improved file relocation method * Elaborate Tape-read/Disc-write system which reduces Tape Motor, Slave Relay and Disc Drive Motor wear substantially. * A large reduction in tape transfer time is also achieved in all but a few cases * NEW "SPLIT" option for todays longer games (we will be using this option in future routines) * All file information is displayed on screen and can be echoed to your printer if needed. SAMSON also transfers itself to disc.

TAPE:- UK £7.50 – EUROPE £8.75 – R. of W. £9.50
DISC :- UK £11.50– EUROPE £12.75 R.of W. £13.50

CHARACTER DESIGNER

(ALL CPC's)

- **REDEFINE YOUR PRINTER DOWNLOAD CHARACTERS**
- **REDEFINE THE COMPUTER SCREEN FONT**
- **REDEFINE ANY/ALL KEYBOARD KEYS (ASWERTY)**
- **DESIGN SPECIAL SCIENTIFIC CHARACTERS/FONTS**

Takes all the hard work out of character designing making it a pleasure. The printer part of the program will only work if your printer is capable of DOWNLOADING and is EPSON compatible – see your printer manual. Works with 7-bit or 8-bit output (8-bit port). All the designing is done "On-Screen" so you can see exactly what you are doing. You can save your newly designed characters to disc and reload them at any time into a basic program and into most Word-Processors. The program also allows the user to redefine any or all of the keys on the keyboard. This feature will be useful for those who require an ASWERTY keyboard. The disc also contains twelve sample fonts for experimentation.

TAPE:- UK £7.99 – EUROPE £9.25 – R. of W. £10.00
DISC :- UK £11.99 – EUROPE £13.25 R.of W. £14.00

DISC HEAD CLEANING KIT

Stocks of these 3" head cleaning kits should arrive within the next few days. HIGHLY RECOMMENDED

UK £8.00 – EUROPE £9.50 – R.of W. £10.00

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Seek and ye shall find

AFTER the build up last month for the Amstrad version of Bard's Tale, I have still not seen the final product. What I have seen and played is the "almost ready to duplicate version". Thanks to Electronic Arts, I was able to visit them and get some hands-on experience of their award-winning adventure.

Designed originally for machines with disc drives only, this latest variant will be available on both disc and cassette for all CPCs. Some of the graphics quality has been lost, together with one or two minor options, but the plot and associated puzzles remain as they were.

An additional facility will be included to enable the storing of a very large number of characters which may be mixed and matched to suit your needs, and the objects held by them swapped among themselves.

Bard's Tale is pure action, with plenty of fighting, tons of interesting objects to find and use and great emphasis on mapping strange locations. The plot is simplistic – Mangar the Dark has taken over the town of Skara Brae and locked it away from the rest of the World by a spell of Eternal Winter. You and your unproven companions must free the city of his evil presence.

Following Mangar came hosts of evil creatures; even in broad daylight it is not safe to walk the streets. Before you can tackle Mangar himself, you must first train your group in combat. Only by repeated skirmishes and battles can you increase your party's level of experience.

As experience increases so do the character's hit points and he can then take more damage and fight more dangerous creatures. Only with a strong party dare you enter the more dangerous parts of the town. Needless to say, the clues and talismans to further your cause are to be found in the more dangerous areas.

When you finally confront Mangar you will need to be truly seasoned veterans. This means shedding the blood of literally thousands of evil creatures. May your sword remain sharp and your magic users healthy.

Getting started is a little traumatic. It is all too easy to get badly wounded or killed. Temples will heal your wounds, but the price is never cheap. Until your characters are truly battle tested, never stray far from a temple.

Six characters are supplied within the program, but you may also create your own. Before you rush off to do so, check what these six have in the way of equipment. It may well be worth "borrowing" some of the more useful items.

When you create a new character you must choose its race from human, elf, dwarf, hobbit, half-elf, half-orc or gnome.

You are then given a set of numbers for the character's attributes – strength, dexterity, intelligence, constitution and luck. These are randomly determined, and if you do not like what you are given, you may choose another set.

Next you must decide what class of character you are creating. There are 10, of which only the first eight are available to novice adventurers: Warrior, paladin, rogue, hunter, monk, bard, conjurer, magician, sorcerer and wizard. Each class has different abilities, and as you may only take out six adventurers into Skara Brae, think carefully about your choice.

Initial attributes are important, but especially so in relation to the proposed class – strength to a fighting man, intelligence to a magic user and dexterity, constitution and luck to all of them.

The action takes place in the narrow streets, passageways and buildings of Skara Brae. Only the first three members of your team can directly engage the enemy. The other three can still

support them or attack by using magic. Spells are vital to your success Higher level magic users can cast spells that will affect whole groups of creatures. If you are faced by hundreds of foes – it can happen – this is the only way to get out alive.

The Bard is a strange character, having both fighting ability and access to magic via playing an instrument. Singing makes him thirsty and between drinks he can only sing as many songs as he has levels of experience.

This leaves him a pretty weak magic user in the early stages, although his ability to use magic instruments can make him worthwhile.

Your fighters must have a strong constitution to take heavy punishment. They must also have high dexterity so that they can get their blows in as rapidly as possible. There are several types of fighters to choose from, all will serve you well and their special abilities will improve rapidly as their levels rise.

Rogues may be useful but their ability to find and disarm traps may be duplicated by the magic users, and as fighters they are not exactly inspiring.

You always start from the Adventurer's Guild in Main Street and on leaving are facing north. The graphics of the houses along the road are reasonable but the house designs are all the same, so it is very easy to lose your way. Draw maps from the beginning and you will soon know your way around the back streets as though you were born there.

Killing creatures that attack you will add to your experience and your purse. As experience grows you can visit the Review Board in Trumpet Street and if it is high enough you will gain a level. This must be one of your main aims, as an increase in level will give you greater hit and sell points and add to one of your main attributes.

A larger number of hit points will enable you to take more damage and spell points determine the number of spells that may be cast. Spell points slowly dwindle as time passes, although if you can find Roscoe's Energy Emporium you can buy them back – at a price.

The initial stages of Bard's Tale are not easy. Each character is given 100 to 150 gold pieces and you must walk up the road a few paces to Garth's Equipment Shoppe and buy weapons and armour. You will only get fairly rudimentary items with your low budget, but each item of armour will reduce your armour class, which in turn reduces damage sustained in battle.

From the start, money is everything. You need it to buy better equipment, heal your wounds and pay the Review Board for your magic users to learn more spells. Items found on your foes may be sold at Garth's, but it is a touch and go business. You can, of course, cheat a little by creating additional members, pooling their money with one and then deleting the extra characters. Many adventurers have found this is the only way to keep going.

In town streets and buildings you will be attacked by up to eight creatures and as you delve into the sewers, catacombs and castle, the number of assailants will increase. It becomes more and more necessary to have accomplished magic users at your back to cast high level spells. Aim to take out any opposing magic users first, as they can damage your team.

A magic user can start out as conjurer or magician, each with a different range of spells. As they progress, they may change their class to sorcerer or wizard. If a magic user reaches the highest level in each class he is an arch mage. These are much-prized members of your team – aim to get at least one!

Your goal is to defeat the evil Mangar in his lair. To do so you must visit all the other special areas to find clues and objects with which to defeat him.

After you have gained a level or four, attempt exploring the sewers under the Scarlet Bard Tavern. Ask the barman for wine, and keep your fingers crossed. Each level in these special areas is mapped on a 22 x 22 grid. Be warned, they scroll round, if you kept going east, you would come back to where you started!

Map these areas carefully, as you must be certain that you have visited every location. Messages written on the walls or spoken by magic mouths are all vital to your progress. Once you have visited all the levels of the sewers you can consider entering the catacombs beneath the Mad God's Temple. To do so you will need to know the password found in the sewers.

After the catacombs comes the castle. This is guarded by a dragon, and only if you are a strong enough party will you even get one step inside. From there on keep looking, the clues must be fought for, but the final reward is worth the effort.

If you decide to try out another class of character, it may be worth waiting until your present characters, especially magic users, are at a fairly high level. It is then possible to fight battles that will give each member tens of thousands of experience points. It is then a simple matter to raise the useful level of a new character very rapidly indeed.

Commands are given via the keyboard. Most are single key entries, but a four letter code is needed to cast a spell. Regular reference to the instructions will be necessary at first, but you will very quickly be casting MAFLs, ARFls and DRBRs with gay abandon.

Nasty things can happen on the streets of Skara Brae, so make sure that you regularly take time out to make back-up SAVEs of your characters. It would be a tragedy to lose several levels of experience for the sake of just a few minutes spent making a SAVE.

Control of the game is from a series of, easy to follow menus but it is well worth using the characters supplied with the game until you are familiar with their use. It would be a pity to lose your own because you are still learning to handle the basics.

If you get really stuck, Electronic Arts Customer Service Department is happy to help on 0753 46465. Also available is a readable clue book, complete with all maps, for £5.

Campaign!

LONG, long ago a proud Lord of the Isles of the Western Sea gave succour to groups of Northerners blown to his land by gales and violent winter storms. When the peace of spring came to the Isles, he bid the visitors leave, even offering them stout ships to replace their damaged own ones. Having seen the land's wealth, the Northerners laughed, drew their swords and elected to stay.

With few fighting men in the Lord's domain, he had no choice but to accept the situation and give the unwelcome visitors rich farmlands. Fearing future treachery, he then secretly planned their doom. He called on the finest smiths of the land to create a magical sceptre of great power. Five years later the dreadful weapon was ready.

The Lord called together all the Northerners and once again asked them to leave his lands. Again they refused. The Lord raised the sceptre above his head and called upon its powers. Darkness gathered and lightning leapt from the sceptre. The flesh of the Northerners began to



smoulder and burn.

One, more maddened with pain than the rest, managed to get to the Lord and wrest the sceptre from his grasp. With one fearful blow, the sceptre fell on the Lord's head and his body became a whirlwind of white hot sparks.

The burning Northerner now called on the Powers of Death to save him and his comrades. The darkness around the sceptre reached out to them with soothing fingers, but as the wounds were eased, their flesh was changed and shadowy became their form. The Dark Sceptre controlled their lives, and evil ruled the Isles.

This is the setting for Firebird's adventure/strategy game Dark Sceptre. Written by Mark Singleton (of Lord's of Midnight fame) it has a highly interactive plot. You control the destinies of a band of warriors whose task is to find and destroy the evil Dark Sceptre.

Your party is not the only one on the island seeking the sceptre. Other bands may be neutral, friendly or downright antagonistic. Each has a thane as commander and the groups are made up of reapers, assassins, fools, thralls, mystics, savages and heralds.



Marching orders

YOU start by giving each warrior his orders and then sit back to await results. Orders that may be given, cover a wide range of actions, from "kill any enemy" or "stalk umbrarg's herald" to "protect your thane" or "guard the shining sword". Just going out to kill the 100 odd other warriors on the island will lead to disaster.

Five of the other bands may perhaps be won over to your side. The sixth consists of the original Shadow Lords, and will always be ready to attack any non-evil character. One of the orders that you may give your stalwart band is BEFRIEND. It is wise to use this to the full.

Using your mystic, it is also possible to BEWITCH one of the opposition into being an unwitting spy on your behalf. The range of possible orders is large – almost too great to use fully until you get a good feel for how the game is to progress.

The graphics consist of a simplistic background of that location, with the character you have chosen to look at in the foreground. Beneath the graphics window is a command menu, a map of the character's immediate surroundings, a description of the location and finally a graphic representation of the time of day.

The warrior shown is a large animated sprite, either strolling past the background scenery or fighting a member of another party. No random element is applied during a fight – a character's attributes are weighed up against the opponent's to determine the outcome. If they are evenly matched the attacker wins.

The command menu allows you to graphically SCAN the position of your party members, to issue orders (PLAN) and to CHECK on each of your characters in turn. If a battle is engaged, you will hear the clash of steel and WATCH will switch the current display to the character presently engaged in a life and death struggle. QUIT additionally offers the options of saving or loading a game position.

Control is by keyboard or joystick. Either way, I found controlling 20 characters a cumbersome operation, with neither method giving a crisp, positive reaction. Working out the interaction of over 100 characters is a mammoth task and presumably the joystick/keyboard is scanned at a somewhat slower rate than I would have liked.

Once orders have been issued, you must wait to see the results of your planning. This can take some time, with unexpected deaths complicating the achievement of your objectives. I use an expanded CPC 464, and the review copy seemed to have some inhibitions about loading a saved game position. On one or two occasions it would not load any game data. Days then passed with great rapidity as no one appeared to be inhabiting the island at all.

Available for all CPCs on both cassette and disc, Dark Sceptre is a fascinating game but it is slow to understand and a great deal of patience will be required to determine the right approach for any sort of success.

Like the Phoenix

YEARS ago there was a superb text only adventure called The Lords of Time. Some time after this came two other acclaimed adventures: Red Moon and The Price of Magik. All three were from Level 9, one of the prime software houses in the UK. Later adventures from this source had limited graphics that were more to satisfy distributors than the players themselves.

Level 9 is like a good claret, improving over the years. Recent titles are Knight Orc and Gnome Ranger. Both have a good story line, very good graphics on machines with a larger memory and vastly improved parsers. Level 9 has now teamed up with Mandarin Software and under the title Time and Magik has



re-released the first three titles I mentioned. All now have good graphics and the improved parser and operating system seen on more recent games.

Lords of Time is a magical tour though nine ages of man in search of nine vital objects. Having found them, they must be placed in the Cauldron of Time to defeat the wicked purposes of the evil Timelords. There are puzzles galore and the plot never lets you rest from this task, chosen for you by Father Time himself.

Red Moon is about a land where magik works, but not as strongly as in days gone by. In the past the moon was crimson red and the source of all the great magiks. As the moon faded to the grey we know today, the magik waned. A great concourse of magicians created the Red Moon Crystal as a substitute. Mounted in the Moon Tower of Baskalos it shone out over the kingdom, maintaining an island of magik. But the great crystal was stolen.

The Red Moon is the story of how a magician (you) recovered this fabulous gem and restored hope to the world. A number of decidedly aggressive creatures are waiting for you and fighting them with bare hands is not recommended. Find a useful weapon and, better still, some armour.

The use of magik is vital to success. To use spells you must enter a command of the type CAST ZAP. Each spell may only be cast successfully if you have the object that is the focus for that particular spell. To CAST ZAP you must have a jewelled dagger. You cannot cast a spell if you have iron on or near you.



The Price of Magik is a sequel to Red Moon. Most of the action takes place in The House of the Red Moon and the crux of the game is your search to find and defeat the evil sorcerer Myglar. There are no pure treasures to find and no score is given. SCORE is recognised and will elicit a report on your present sanity and apparent age.

The aim is to learn, and find a use for, some 18 odd spells that will finally enable you to neutralise Myglar's powers. Again, a weapon and armour are useful before you get too involved. Magik will help, but remember that killing might release your opponents' ghosts, who may not be all that friendly towards you in the future.

You may control some creatures, magik being a definite plus for this. Using the 18 spells follows the same principles in Red Moon, and Level 9's own brand of humour is never far away.

Comprehensive clue sheets are available, and Level 9's are by far and away the best I have ever seen. Even if you want to cheat heavily, the clues will only point you in the right direction and not give you an answer to the entire game.

Time and Magik is available on cassette and disc for CPC machines and is well worth buying. All three adventures are classics of their kind and are not only a good challenge but are full of humour and clever puzzles.

RATINGS	Bard's Tale	Dark Sceptre	Time and Magik
Plot	70	67	78
Atmosphere	82	70	80
Addiction	80	65	80
Difficulty	68	70	72
Overall	77	67	79

Reflections

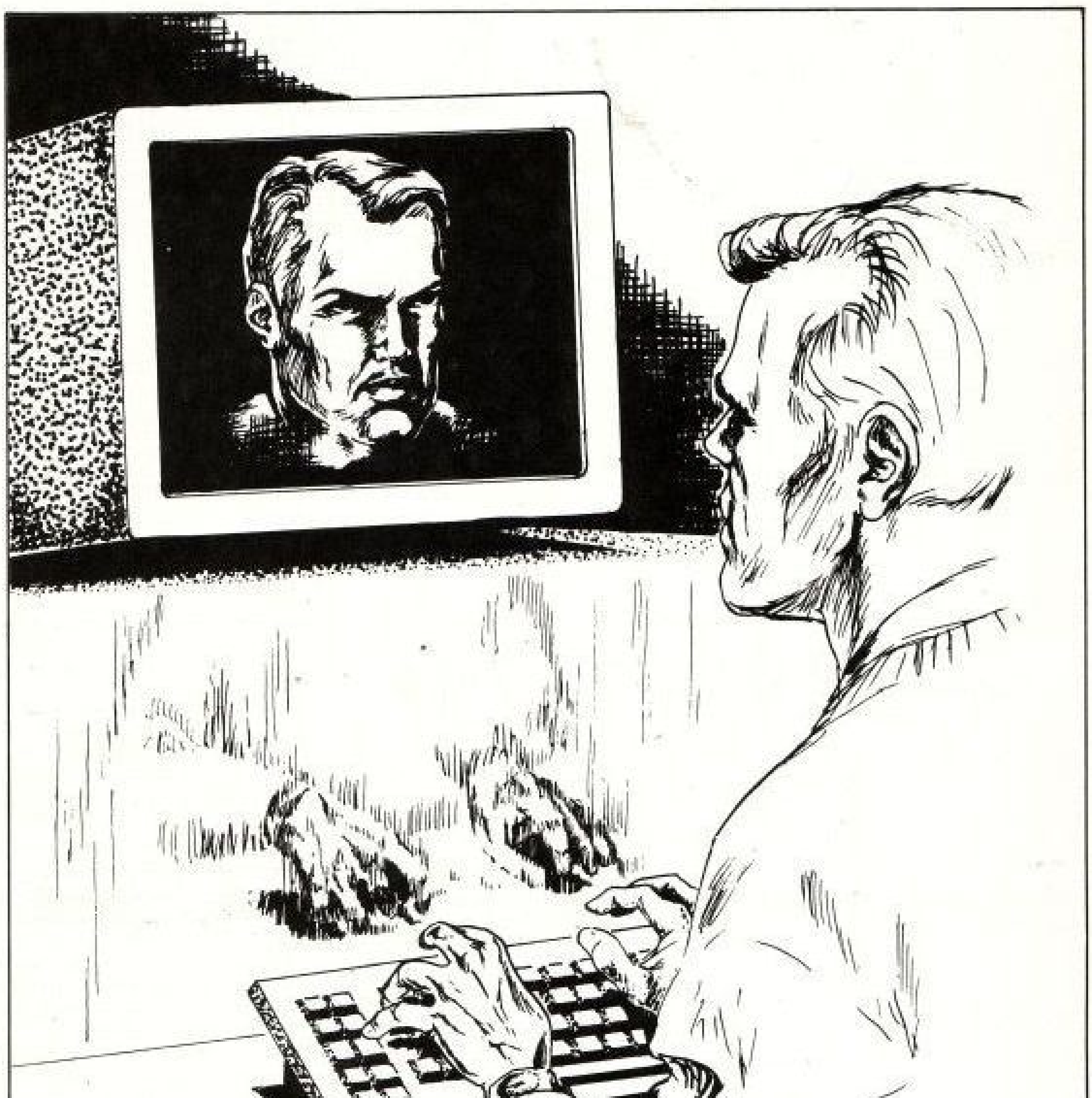
Improve your image with Cy Noble's screen mirroring RSX

THIS program will reflect a mirror image of any area or all of the screen, operating in either the x or y axis, using the CPC's Basic coordinates. It has been written in relocatable machine code and locates itself just below HIMEM. It lowers HIMEM to just below itself after setting up a new RSX command.

The new command is: REFLECT,x,y,width,height,z. It works in any mode and requires the following five parameters.

x,y	Graphics coordinates of the bottom left-hand corner of the area to be reflected. X can be any number from 0 to 639, and y is a number from 0 to 399. (0,0 is the bottom left-hand corner of the screen).
width,height	X and y coordinates are added to these so that if the total width or height exceeds the screen boundaries, nothing will happen. If x is 200, then width can be no greater than 439; if y is 50, then height can be no greater than 349.
z	This must be either 1 or 0 specifying either a left to right (1), or top to bottom (0) reflection.

If any parameter is omitted, or is outside the limits specified, the routine returns a Bad Parameter message.



The first part of the listing reads the data, pokes the machine code into place, and calls it. The machine code occupies &280 bytes minus &3E bytes (&3E is the length of the relocation code which is no longer required once it has done its job.

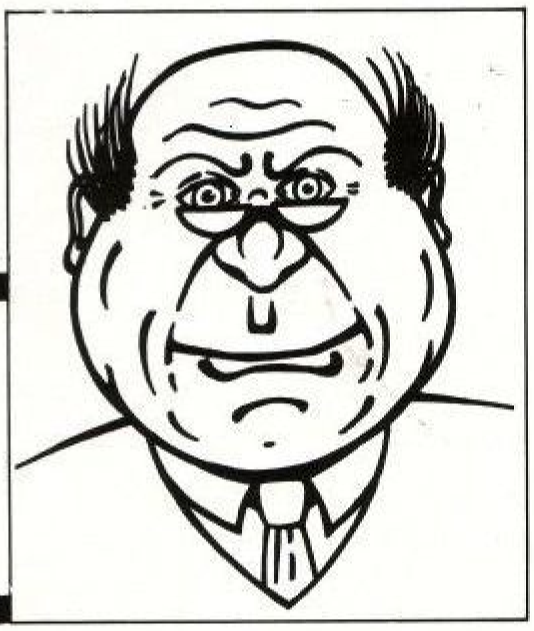
There follows a small routine in 0 mode which will demonstrate the speed and power of the REFLECT command.

The data statements must start at line 1000 and are checksummed. If there are any mistakes in your listing you will be informed of the line number to check. If you don't get a line number to check, but the checksum at the end is still wrong, the most likely cause is typing a line twice, often done in longish listings.

```
100 ' REFLECTIONS
110 ' By Cy Noble
120 '
130 CLS:RESTORE:linsum=0:sum=0:ln=1000
140 csum=59209:proglen=&280:rlen=&3E
150 start=HIMEM-proglen:MEMORY start-1
160 FOR a=start TO proglen+start STEP
    8:linsum=0
170 FOR b=0 TO 7
180 READ num$:num=VAL("&"+num$)
190 POKE a+b,num
200 linsum=linsum+num:NEXT
210 READ num$:num=VAL("&"+num$)
220 IF num=linsum THEN PRINT"Line";ln;
    "OK" ELSE a=proglen+start
230 ln=ln+10:sum=sum+linsum
240 NEXT:IF num<>linsum THEN 270
250 IF sum<>csum THEN 280
260 CALL start,start,start:MEMORY HIME
    M+rlen:GOTO 340
270 PRINT"Data error in Line";ln:END
280 PRINT"Checksum error: check lines
    130 to 160."
290 PRINT"If OK, check DATA lines."
300 END
310 '
320 '**** TEST ROUTINE ****
330 '
340 MODE 0:BORDER 0:INK 0,0
350 FOR x=1 TO 12
360 FOR y=2 TO 15
370 LOCATE x,y
380 PAPER(RND*12)+1
```

```
390 PEN(RND*12)+1
400 PRINT CHR$(207)
410 NEXT:NEXT
420 PAPER 0:PEN 1
430 LOCATE 1,25
440 PRINT "Reflect X or Y axis?";
450 in$=INKEY$:IF in$=""THEN 450
460 in$=UPPER$(in$)
470 IF(in$<>"X")AND(in$<>"Y")THEN 450
480 z=ASC(in$)-ASC("X")
490 REFLECT,0,33,639,366,z
500 GOTO 420
510 '
980 '*** RELOCATABLE MACHINE CODE ***
990 '( data must start at line 1000 )
1000 DATA dd,6e,00,dd,66,01,01,6c,2fc
1010 DATA 00,11,2f,00,e5,19,d1,c5,2d4
1020 DATA 4e,23,46,23,eb,e5,09,23,2d6
1030 DATA 7e,dd,86,00,77,23,7e,dd,3d6
1040 DATA 8e,01,77,e1,eb,c1,0b,0b,3a9
1050 DATA 79,b0,20,e3,c3,9b,00,2c,3b6
1060 DATA 00,9b,00,9e,00,a6,00,a9,288
1070 DATA 00,ac,00,bd,00,c7,00,d1,3011
1080 DATA 00,da,00,e4,00,ed,00,f1,39c
1090 DATA 00,fb,00,05,01,0d,01,26,135
1100 DATA 01,2a,01,31,01,35,01,3a,ce
1110 DATA 01,41,01,45,01,55,01,59,138
1120 DATA 01,5c,01,5f,01,63,01,6b,18d
1130 DATA 01,6f,01,b6,01,b9,01,bd,29f
1140 DATA 01,c2,01,c5,01,d1,01,d5,331
1150 DATA 01,db,01,de,01,e2,01,ea,389
1160 DATA 01,f3,01,fc,01,05,02,08,201
1170 DATA 02,0b,02,0e,02,11,02,14,46
1180 DATA 02,18,02,1f,02,28,02,2b,92
1190 DATA 02,3c,02,01,aa,00,21,b7,1c3
1200 DATA 00,cd,d1,bc,3e,c9,32,00,393
1210 DATA 00,c9,af,00,c3,bb,00,52,348
1220 DATA 45,46,4c,45,43,d4,00,00,233
1230 DATA 00,00,00,fe,05,c2,c5,01,28b
1240 DATA dd,5e,04,dd,56,05,ed,53,3b7
1250 DATA 64,02,dd,5e,02,dd,56,03,2d9
1260 DATA ed,53,62,02,dd,6e,06,dd,3d2
1270 DATA 66,07,22,60,02,19,11,90,1ab
1280 DATA 01,b7,ed,52,d2,c5,01,dd,46c
1290 DATA 6e,08,dd,66,09,22,5e,02,244
1300 DATA ed,5b,64,02,19,11,80,02,25a
1310 DATA b7,ed,52,d2,c5,01,cd,0b,466
1320 DATA bc,e6,cd,11,bc,2a,60,02,3c7
1330 DATA cb,3c,cb,1d,ed,5b,5e,02,397
1340 DATA fe,02,28,0c,cb,3a,cb,1b,31f
1350 DATA fe,01,28,04,cb,3a,cb,1b,316
1360 DATA cd,1d,bc,c1,ed,4a,22,68,428
1370 DATA 02,ed,5b,62,02,cb,3a,cb,37e
1380 DATA 1b,2a,68,02,43,cd,4e,02,20f
1390 DATA 10,fb,22,6a,02,dd,7e,00,2f4
1400 DATA b7,ca,d1,01,dd,21,6c,02,3bf
1410 DATA cd,11,bc,dd,77,00,fe,00,3ec
1420 DATA 20,03,11,55,aa,cd,1f,02,221
1430 DATA ed,4b,66,02,2a,68,02,22,256
1440 DATA 68,02,ed,43,66,02,7e,f5,375
1450 DATA 23,10,fb,3a,67,02,47,2a,242
1460 DATA 68,02,f1,dd,cb,00,46,20,369
1470 DATA 12,dd,cb,00,4e,28,29,c5,31e
1480 DATA 06,08,17,cb,19,10,fb,79,28d
1490 DATA c1,18,27,c5,f5,06,04,cb,38f
1500 DATA 27,cb,19,10,fa,06,04,cb,2ea
1510 DATA 39,10,fc,f1,06,04,cb,1f,32a
1520 DATA cb,11,10,fa,79,c1,18,0a,342
1530 DATA f5,a2,4f,f1,a3,cb,39,cb,549
1540 DATA 27,b1,77,23,10,bc,2a,68,2d0
1550 DATA 02,cd,4e,02,ed,4b,66,02,2bf
1560 DATA 0d,c8,c3,5f,01,21,6d,02,288
1570 DATA 7e,b7,c8,cd,5a,bb,23,18,41a
1580 DATA f7,cd,1f,02,ed,4b,66,02,385
1590 DATA cb,39,ed,5b,6a,02,2a,68,34a
1600 DATA 02,ed,43,66,02,7e,f5,23,330
1610 DATA 10,fb,3a,67,02,47,1a,f5,304
1620 DATA 13,10,fb,3a,67,02,47,2b,233
1630 DATA f1,77,10,fb,3a,67,02,47,35d
1640 DATA 1b,f1,12,10,fb,2a,68,02,2bd
1650 DATA cd,4e,02,22,68,02,2a,6a,23d
1660 DATA 02,cd,40,02,22,6a,02,ed,28c
1670 DATA 4b,66,02,0d,20,bc,c9,2a,28f
1680 DATA 62,02,cb,3c,cb,1d,7d,3c,30c
1690 DATA 32,66,02,2a,64,02,cb,3c,231
1700 DATA cb,1d,cb,3c,cb,1d,cb,3c,3de
1710 DATA cb,1d,7d,3c,32,67,02,c9,305
1720 DATA 7c,c6,08,67,d0,7d,c6,50,414
1730 DATA 6f,7c,ce,c0,67,c9,7c,d6,4fb
1740 DATA 08,67,fe,c0,d0,7d,c6,b0,4f0
1750 DATA 6f,7c,ce,3f,67,c9,00,00,328
1760 DATA 00,00,00,00,00,00,00,00,0
1770 DATA 00,00,00,00,00,0d,0a,42,59
1780 DATA 61,64,20,70,61,72,61,6d,2f6
1790 DATA 65,74,65,72,00,00,00,00,1b0
1800 DATA 00,00,00,00,00,00,00,00,0
```

Applications advice



David Foster changes his character and produces a poke for a printer port

THANK you to all those people who have written in with more suggestions for Ruth Newbury and her problems. I have passed them on to her. Tony Wilson from Olney says that in addition to using Protext to keep all his student notes, he uses Masterfile III to handle all his mark lists, and also recommends Money Manager for keeping college accounts. He also makes use of the statistical program Amstat1.

I would also like to thank those people who have written in saying that they have found this column useful.

DDI-1 interface problems



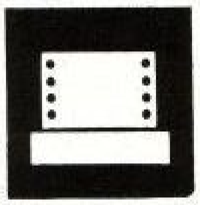
Following my comments in the January issue about the problems some 464 owners have with their first disc drive misbehaving either when they have a lot of peripherals connected, or they have the disc drive connected to a peripheral or peripherals, J.Wilson writes asking if there is any solution.

As far as I know, there is no complete solution to the problem and some interfaces are more sensitive in this respect than others. If it is a case of overloading the power supply with add-ons, it might be possible for an electronics expert to make up an auxiliary power supply to power the extras, but this is definitely not something for the rank-amateur, and if you do, any warranty will most probably go straight out of the window.

Other than that, assuming that all the connections are clean *(rubbing the through connectors gently with a pencil eraser cleans them up a treat – Ed)* and the interface is connected as close to the keyboard as possible, I fear that the only thing to do is reduce the number of items of equipment until the problem goes away.

Some people have found that adding a further rom to a rom board has been enough to cause the problem. If this is the case and the rom board is a Rombo, a partial solution may be found by obtaining one of Rombo Productions ZIF (Zero Insertion Force) sockets that plug on to the small connector on the Rombo. This will allow you to remove a rom when not required. Using this, you can change over roms without increasing the total number in use at any time. You must switch everything off before doing this though.

KDS Mk1 8 bit port and Promerge

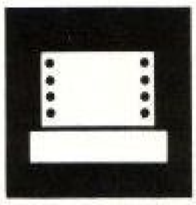


Peter Ceresole has written about using the KDS 8 bit port interface with Promerge Plus, commenting on the fact that the loader program supplied with the interface caused problems, resulting in only garbage being printed. He included a modified Basic loader for the interface, which was created for him by Arnor and which solves the problem. See Figure I.

```
10 RESTORE 10:SYMBOL AFTER 256:MEMORY
   HIMEM-26:m=HIMEM+1
20 FOR q=m TO m+22:READ a:POKE q,a:NEX
   T
30 m=m+4:FOR i=0 TO 2:POKE q+i,PEEK(&B
   DF1+i):NEXT
40 hi=INT(m/256):lo=m-hi*256:POKE &BDF
   2,lo:POKE &BDF3,hi
50 POKE &BD31,&C3:POKE &BD32,&2B:POKE
   &BD33,&BD:CALL &BD58
60 DATA &fe,&0a,&37,&c8,&f5,&07,&e6,&0
   1,&ee,&01,&06,&e5
70 DATA &ed,&79,&f6,&02,&ed,&79,&e6,&0
   1,&ed,&79,&f1
```

Figure I: Modified KDS Printer Port set up program for use with Promerge Plus

Redefining characters on the DMP2000



Roger Paget of Barnet has entered the example in the manual, which worked, but wants to know why the character is always printed towards the bottom of the line, in line with any descenders in characters.

This is directly connected with the CPC printer port, which only allows you to send 7 bits to the printer. So the maximum value that may be sent to the printer is 127. Consequently you cannot set the uppermost bit in an 8-character grid and, you cannot send the code required to tell the printer to use the upper eight pins, as this requires a value of 128 or higher to be sent in order to turn the feature on.

Roger also wants to know how to redefine more than one character. In order to do this you must send the complete sequence of codes again, for each character that you want to redefine, starting with the 27,38,0 (see below).

The way to redefine characters is covered in the printer manual, but one or two points are perhaps not very clear.

What seems to cause most trouble is the fact that even though one of the printer control code sequences is described as enabling the redefinition of characters 0 to 31, this is only partly true. In reality some of the codes cannot be redefined, as they are needed by the printer in their normal form. The code for a line feed, for example, is decimal 10 and for a carriage return, 13. You cannot therefore redefine those. The codes that may be redefined are: 0 to 6, 16, 17, 21 to 23, 25, 26, 28, 29, 31.

In addition, the printer DIP switch 2-4 must be

set to ON, and the codes 27,73,1 must be sent to the printer to tell it that codes between 0 and 31 are printable.

The codes 27,58,0,0,0 must be sent to the printer in order to copy the normal characters down into ram, and the ram character set must be turned on with 27,37,1,0.

After that the character may be redefined using the code sequence 27,38,0,c,c,0,n1,n2,n3, . . . n11 where c is the number of the character to be redefined and n1 to n11 are the values required to redefine the character.

The second zero in that long sequence is the attribute byte, and when used with a CPC this should always be zero unless an 8 bit port has been fitted, in which case a value of 128 may be substituted. This determines whether the upper or lower pins of the print head are used and without an 8 bit port, only the lower ones may be used.

Jim Cater of Plymouth sent me a detailed letter covering the above points and also enclosing the codes required to define many of the Greek character set and one or two others. These are listed in Figure II.

Figure III gives the codes required to redefine a number of the characters on screen, using the Basic SYMBOL command. The remaining characters are already defined in the CPC screen character set.

Another tip from Jim is the way that he deals with the problem of using these redefined characters when he is using NLQ. The problem is that the characters are defined as draft characters, so NLQ may not be used.

His solution is to only turn on the redefined character set immediately before the character, then turn on bold (emphasised) printing, print the character, then turn off the bold and the redefined character set. In this way, he gets NLQ, then the new character printed in bold (to simulate NLQ), followed by the rest of the text in NLQ.

Alpha	0,56,68,0,68,40,16,40,68,0,0
phi (l)	0,0,8,85,8,119,0,85,8,0,0
psi	0,56,4,0,4,59,4,0,4,56,0
phi (s)	0,29,34,0,69,8,81,0,34,92,0
pi (s)	0,64,0,124,0,64,0,124,0,64,0
gamma	0,127,0,64,0,64,0,64,0,96,0
omega (s)	56,68,0,4,0,24,0,4,0,68,56
zeta	0,34,18,1,16,45,82,0,80,32,0
+/-	0,17,0,17,0,125,0,17,0,17,0
sq root	0,0,4,2,1,0,127,0,64,0,0
1/2	120,2,4,8,16,32,73,18,1,20,9
delta	0,0,0,38,73,0,73,54,0,0,0
tor	0,0,16,32,0,62,0,32,0,32,0
omega (l)	0,25,32,7,64,0,64,7,32,25,0
theta	0,28,34,8,65,8,65,8,34,28,0

Figure II: Codes required to produce a variety of redefined characters on the DMP2000 and most Epson-compatible printers

delta	60,6,6,60,102,120,60,0
tor	0,0,126,88,24,24,24,0
sq root	30,30,24,24,216,120,56,24
phi (l)	60,24,126,219,219,126,24,60
zeta	28,18,60,16,8,4,36,24
gamma	255,99,96,96,96,96,240,0
psi	24,219,219,255,126,24,24,24

Figure III: Values required to define a variety of characters on screen, using the SYMBOL command

There is now no longer any excuse for any budding mathematicians/scientists not being able to produce top quality results.

Indents and double line feeds

D.Steen from Cornwall has a problem with his Cosmos 80 printer, which indents the occasional line in the middle of a document. As the problem occurs with more than one program and with Basic listings, I can only assume that the fault is with the printer (a model of which I have no experience), and would suggest that the service agents are asked to look at it.

Green and Baffled from Bury St.Edmunds is suffering from the old double line feed problem. As his printer is an Amstrad DMP3000, which comes with a cable suited for use with the IBM PC, I assume he has either modified the cable, or obtained another one. Almost certainly, the problem is caused by pin 14 being connected. The solution, as mentioned in earlier columns, is to disconnect the wire connected to the pin marked 14. Try it first by sticking a small piece of sticky tape over pin 14, reconnecting and testing.

Exporting data from Masterfile III

T.Western of Coventry is having trouble exporting data from Masterfile III for use in Protext. He finds the instructions in the Masterfile manual confusing.

Masterfile provides flexible export facilities and allows you to create export files in a number of formats that may be used by many programs. When you select the Export option you are asked to specify the field reference for the first field you wish to export and then any default text.

Default text is that which should be exported if the field in the database contained nothing. You might, for example, specify NIL to be sent if a field contained nothing, but usually you would just press Return.

Having specified which fields you want to export, and their order, you are asked whether data identifiers are to be sent. These are the letters by which each field is known in the database, preceded by an ampersand (&). You would normally only use this when exporting to a program that required them for mail merging, one of the few being the Tasword word processor. Otherwise, you would specify N for No.

The next question asks whether LF (line feeds) are to be sent as well as CR (carriage returns) at the end of a line. In most cases, the answer will be Yes.

The next question asks whether line breaks are to be edited. Masterfile III allows you to save multi-line fields of data by separating each line with an underscore symbol. When exporting for use with other programs, you would normally specify that you want them edited, in which case, each field will be sent as separate lines, with the underline character converted to a carriage return, or a carriage return and a line feed depending on your answer to the previous question.

Another option asks whether you wish data to be comma delimited. Comma delimited means that each field of data will be wrapped in quotation marks and separated from the next field by a comma, with each complete record occupying a single line.

This is usually only required for importing data into certain other databases, such as dBase II, or for some mail merging programs when the contents of the database might contain commas or quotation marks which would otherwise confuse the mail merging program. For a simple text file the answer would be No.

The final question asks whether a soft EOF is required. This determines the way that the end of the new file is marked, and in most cases the answer should be Yes.

At this point you are asked to give a name to save the export file with and Masterfile will write the specified data fields to the file.

That about rounds up the questions and answers for this month. It is very pleasing to get a steady stream of questions from readers, so please keep them coming.

Basic reading

I have always found Ian Sinclair's books to be very readable and there is one called Programming the CPC464 (equally applicable to the 6128, in nearly all respects), which starts right at the beginning and another called Advanced Programming on the CPC6128, which progresses further.

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Is it that easy to use? Several leading reviewers have already sung its praises on this very point.

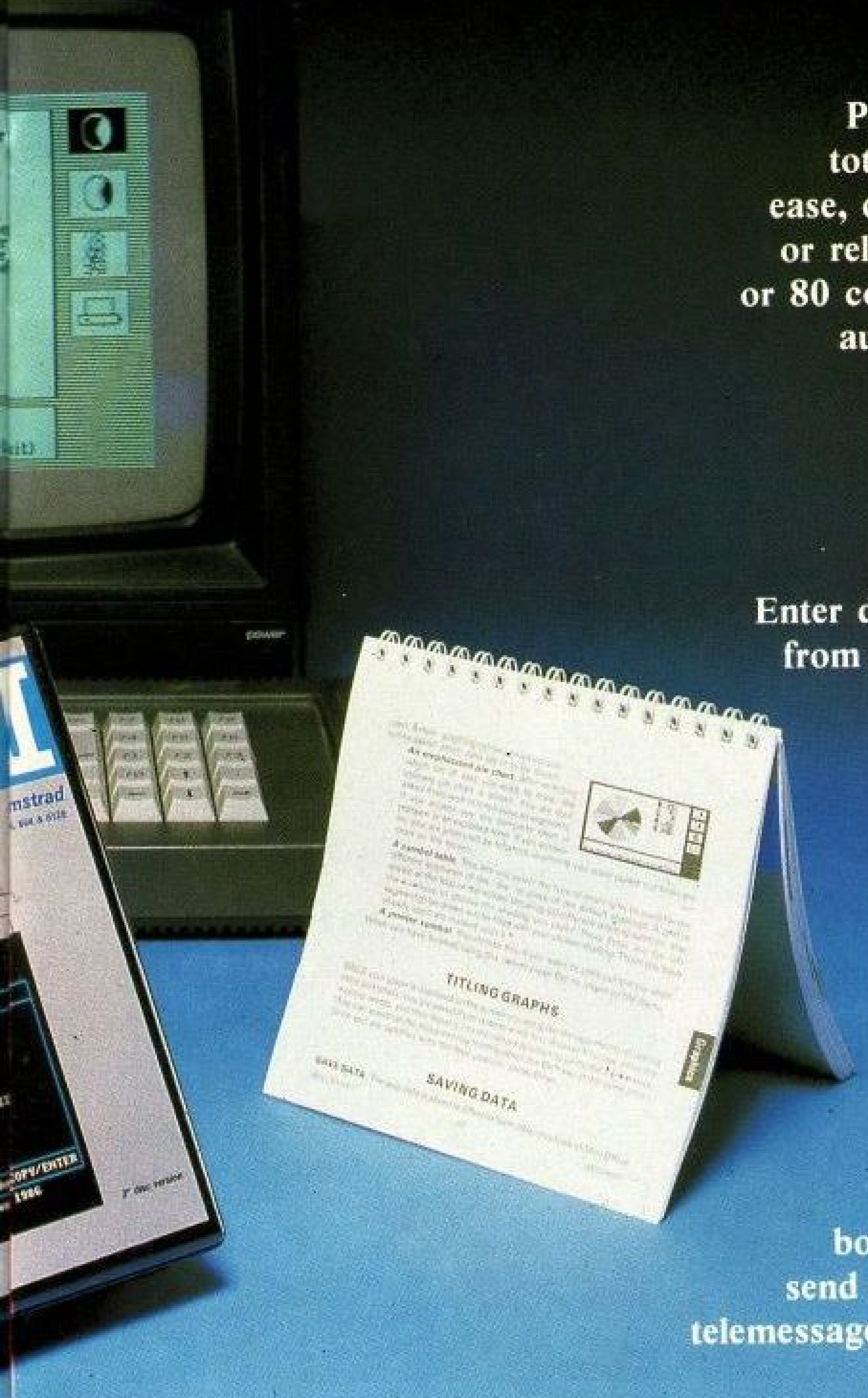
Yet possibly the best advertisement for Mini Office II is that it comes from the same stable that produced the original Mini Office package back in 1984.

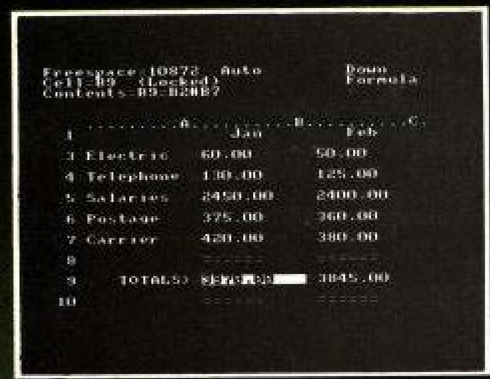
That was so successful it was shortlisted in two major categories of the British Microcomputing Awards – the Oscars of the industry – and sold in excess of 100,000 units!

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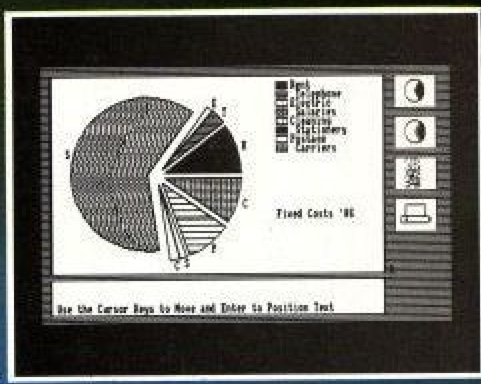
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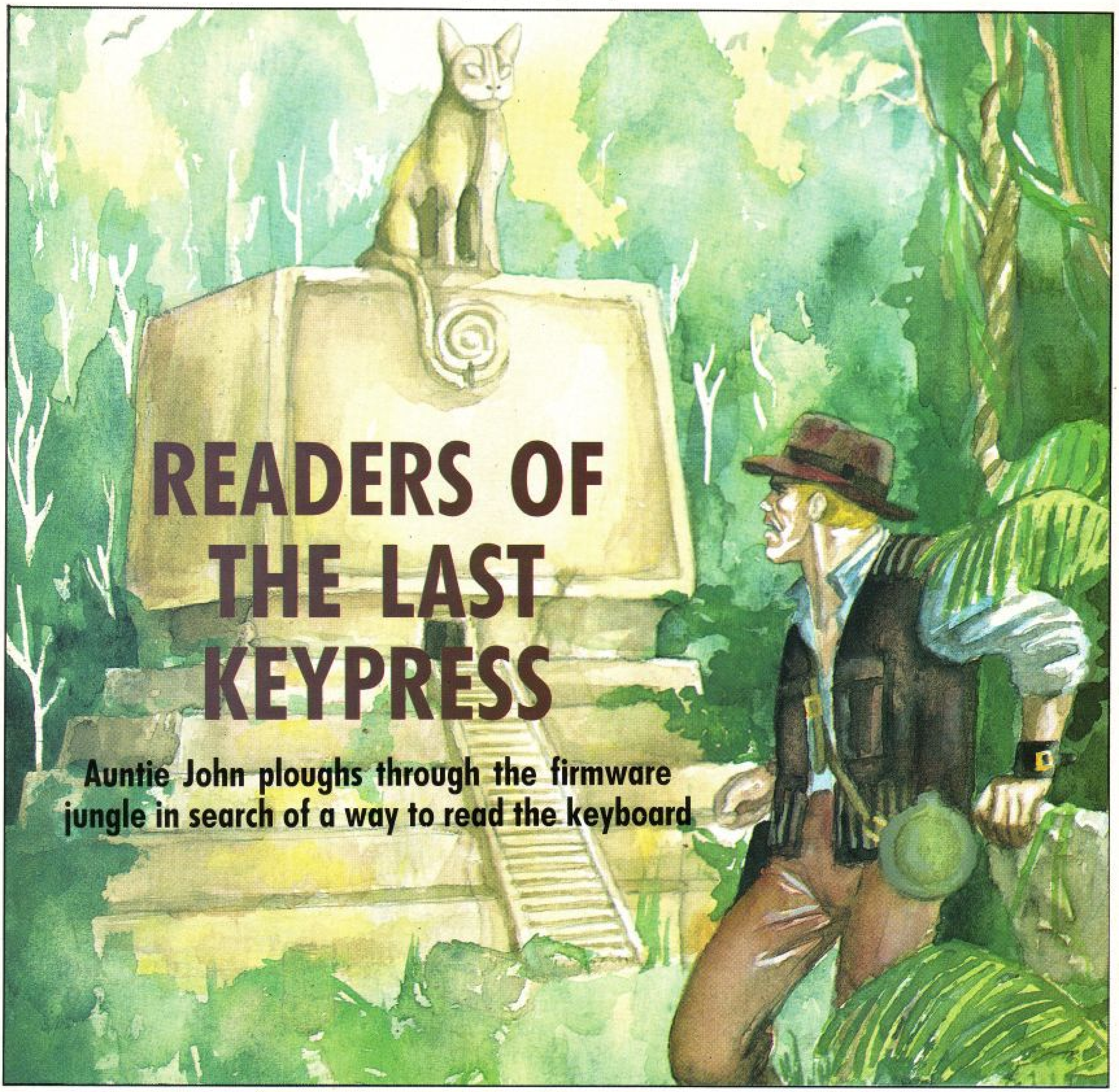
'This package is incredible value. It includes a word processor, database, spreadsheet, graphics display, label printer and communications module. You could well spend over £200 to get the same range of functions if you bought separate programs from other firms.'

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DATABASE SOFTWARE

Order form on Page 53



READERS OF THE LAST KEYPRESS

Auntie John ploughs through the firmware jungle in search of a way to read the keyboard

AFTER last month's look at writing things to the screen, it seems only natural to spend some time looking at how to read things from the keyboard. I know if you use your computer a lot you might find that difficult because the letters start to wear off the keytops, but that's easily solved with a hot pin and a book called How to read Braille.

The type of reading I was actually referring to was scanning the keyboard using software to see which keys are being pressed.

There are two main ways to check the keyboard for keypresses, namely real-time and not real-time. If you are writing an arcade game then obviously you will need a realtime check on the keys, and you will also need to be able to read more than one key at a time so you can go left and nuke-the-furry-little-gibbles at (almost) the same time.

If you are writing a text input routine, then you can use the not real-time version, because the computer doesn't need to be doing anything when it is waiting for you you to press a key.

We are lucky because firmware routines to do both are just sitting in rom waiting for us to call them.

Incidentally, did you know the keyboard is scanned using the input/output port of Arnold's sound chip? Course you did, silly me. Once I connected about 20 metres of doorbell extension cable to my joystick port to make something that I could use in a quiz game. Each competitor had a switch wired to the computer and was checked for by a program that decided who pressed their switch first. All was going fine until the very first quiz when, five minutes before the start, the computer went Neeekkkk! Phut.... and died.

With all that capacitance about, the cable I'd connected decided to build up a charge and zap my little sound chip. Sniff.

So out with the soldering iron and sweetie cigarettes, and me and my mate Green unsoldered the soundchip and put another one in. There is a moral to this story but I can't remember it. Something to do with buffering inputs to the joystick port probably.

"What about scanning the keyboard?" I pretend to hear you cry. And why not?

A casual, almost cursory, and decidedly cool glance at the Amsoft Firmware Guide (available from all good stockists) will provide you with at least five calls that look feasible. My favourite ones are 2:KM WAIT CHAR (#BB06) which returns an Ascii code in the A register, and 10:KM TEST KEY (#BB1E) which when given the key number (not the Ascii) sets the zero flag false if the key is pressed and true if it isn't.

I won't insult your intelligence by telling you which is the realtime, and which waits. As there are two different calls, two examples should suffice to enable you to use them in your own programs. Both use subroutines you may (or may not) find useful in later life.

Figure I: Psuedo-code for Program I

```
LET HL=WELCOME STRING          ;HL points to welcome message using
CALL PRINT_STRING              ;last month's string print routine.
SET COUNTER=0                  ;Set loop counter to zero.
LOOP
CALL WAIT_KEY                  ;Firmware routine that returns key in A.
IS A=CARRIAGE RETURN?          ;Has Return been pressed?
  YES, goto EXIT               ;Yes, finish
  NO, carry on
CALL TXT_OUTPUT                ;Print the character
LET (HL)=A                     ;Poke the character into memory.
LET HL=HL+1                    ;Increment HL to point at next storage location.
LET COUNTER=COUNTER+1          ;Increment counter.
IS COUNTER=80?                 ;Check for 80 characters.
  NO, goto LOOP                ;No, go back.
  YES, carry on
EXIT                           ;The end of the routine.
LET (HL)=0                     ;Poke in an end of text marker.
{E}
```

Figure II: Psuedo-code for Program II

```
{L}
MODE 1                         ;Clear the screen to 40 columns.
LET XPOS=20                    ;Point XPOS to middle of the screen.
LET FLAG=0                     ;Reset variable that is used to check
                               ;for the Escape key being pressed.
;Routines for moving left
IS XPOS=1?
  YES, skip to move right routine
  NO, is Z pressed? If YES then erase blob:XPOS=XPOS-1:reprint blob

;Routines for moving right
IS XPOS=40?
  YES, skip to ESC
  NO, is X pressed? If YES then erase blob:XPOS=XPOS+1:reprint blob

;Routine to check Escape key
Is Escape pressed?
  YES, LET FLAG=1
IS FLAG=0?
  YES, goto LOOP
  NO, return to Basic
{E}
```

Program I

```
{L}
;
;Wait Key example.
;
;Entry and display of text strings using firmware routines.
;

org &4000                   ;Code starts at this address.

wait_key equ &bb18          ;Firmware, waits for a keypress.
txt_output equ &bb5a        ;Firmware, displays Ascii char held in A.


;Display the message.

ld hl,welcome               ;String which is defined later on.
call print_string           ;User defined subroutine.


;Read in text from keyboard.

ld hl,buffer                ;Some specially reserved memory.
call input_string           ;Another subroutine.


;Display the entire string, but in inverse.

ld hl,setinks               ;Points to some characters that will swap
call print_string           ;pen and paper, and so display in inverse.
ld hl,buffer                ;Points to the text typed in.
call print_string           ;Display it.
ld hl,setinks               ;Must repeat swapping paper and pen before
call print_string           ;before finishing. What if we didn't?
ret                         ;Return to Basic.



;
;*** Subroutines ***
;


;This routine takes a string pointed to by HL and displays it on the screen.
;The string can be any length, but must end with the null character 0.
;The firmware routine txt_output is used. Registers HL and A are corrupted.

ld a,(hl)                   ;Get character pointed to by HL.
cp 0                        ;Is it 0? (the end marker)
ret z                       ;If it is, then return from subroutine.
call txt_output             ;If not, carry on and display the character.
inc hl                      ;Move HL to point to next character.
jr psloop                   ;Jump back.


;This routine reads a string character by character from the keyboard,
;echoes it to the screen and puts it into a block of memory pointed to
;by HL. The entry is terminated if either Return is pressed, or the
;number of characters exceeds 80. An end of string marker (zero) is
;inserted at the end of the text.
;
;The firmware routines txt_output and wait_key are used.
;Registers HL, B and A are corrupted.

ld b,0                      ;Set loop counter.
call wait_key               ;Get key pressed.
cp 13                       ;Is it Return?
jr z,exit                   ;Yep, end routine.
call txt_output             ;Else display character.
ld (hl),a                   ;Poke it into buffer.
inc hl                      ;Point HL to next location.
inc b       ;End of the program.
{E}
```

Program II

```
{L}
;
;Test Key example.
;
;Moving a blob using the firmware routines.
;

org &4000                   .start of code

test_key equ &bb1e          ;Firmware routine to check a key.
txt_output equ &bb5a        ;The old favourite text output routine.
set_mode equ &bc0e          ;just like a Basic MODE command.
set_cursor equ &bb75        ;just like a Basic LOCATE.

ld a,1                      ;We want mode 1 (take my word for it).
```

Km Wait Char

This is the key routine that waits for you to press a key (drat, I've given it away!). The example program uses the routine to allow the user to type in a string of Ascii characters from the keyboard, store them in memory, and then print them out again.

Exciting, you think. Yes I know, real cutting-edge stuff, but the routines could be used in an adventure game, or to input a name for the high score in your latest epic.

Program I is listed in standard Z80 mnemonics (pronounced ne-nom-mon-nom-om-om-om-ix) which you must type into an Assembler to make any use of. I know we've had this conversation before, but to learn machine code *you need an assembler*.

Figure I shows the psuedo-code for Program I, so you can see what's going on. There are some points to look out for. The normal cursor is not displayed on the screen, which makes it look a bit odd, and the Delete and Escape keys don't do anything except make little patterns appear. You would have to write another routine to check for these in the same way that code 13 (the Return key) is checked for. The computer keeps waiting for characters until either 80 have been typed in, or Return is pressed.

Km Test Key

As you would most likely use this routine when writing an exciting, if-it-moves-kill-it game, the example in Program II shows you how to use this, and other, firmware routines to move a blob on the screen from left to right. I expect you will see it in the arcades soon.

Figure II shows the pseudo-code for Program II. Although other firmware routines are used in this example, none of them should cause any problems to clever people like yourselves. You'll notice that the program runs much faster than anything you could write in Basic. You might like to try and slow it down by putting FRAME FLYBACK calls (call &bd19) into the main loop. This will also reduce any flicker.

Other things to try include adapting the program to run in mode 2, and trying to display more than one character at a time, say a 2 x 2 washing-machine made from User Defined Graphics.

You should also note that by changing the numbers in the check left and check right routines you can check for the joystick being used.

p;:.................hj /mnnnnnnnnnnnnnnnnnnnn, lkm ;:/...k cccccccccccccccccccnx bvn. Sorry about that, my cat walked over the keyboard.

So, we have looked at reading and writing. What's next? Rithmetic of course! But that's next month.

```
call set_mode                ;And this call will do it.

ld a,20                      ;Set the XPOS variable to the middle
ld (xpos),a                  ;of the screen.

ld a,0                       ;This sets the FLAG variable to zero.
ld (flag),a                  ;FLAG is used to see if esc is pressed.

call print_blob              ;These are self-explanatory, aren't
call check_left
call check_right
call check_esc
ld a,(flag)                  ;Check FLAG. If it's non-zero then
cp 0                         ;esc has been pressed.
jr z,loop                    ;If it's zero, loop back.

ret                          ;Return to Basic.

;Bytes set aside to hold variables.

;
;*** Subroutines ***
;

;Check to see if blob is as far left as possible.
;Check for key number 71 (the Z key) and change XPOS if so.
;Erase and redisplay the blob.

ld a,(xpos)
cp 1
ret z                        ;if XPOS=1 then return from subroutine.

ld a,71
call test_key
ret z                        ;if key not pressed then return from s/r.

call erase_blob
ld a,(xpos)
dec a                        ;XPOS=XPOS-1
ld (xpos),a
call print_blob

ret                          ;Return from subroutine.

;Check to see if blob is as far right as possible.
;Check for key number 63 (the X key) and change XPOS if so.
;Erase and redisplay the blob.

ld a,(xpos)
cp 40
ret z                        ;if XPOS=40 then return from s/r.

ld a,63
call test_key
ret z                        ;if key not pressed then return from s/r.

call erase_blob
ld a,(xpos)
inc a                        ;XPOS=XPOS+1
ld (xpos),a
call print_blob

ret                          ;Return from s/r.

;Check for Escape key, setting (flag)=1 if pressed.

ld a,66
call test_key
ret z                        ;Return from s/r if esc not pressed.

ld a,1
ld (flag),a(Q     ;Return from s/r.

;Draw a space over blob at (XPOS).

ld a,(xpos)
ld h,a
ld l,10
call set_cursor

ld a,32                      ;ascii code for a space.
call txt_output

ret                          ;Return from s/r.

end                          ;End of program.
```

I HAVE tried most word processors available for the CPC – from the original Mini Office to the CP/M oldies like Wordstar – but I had never tried Brunword, so I was pleased to be given the 6128 version to test.

For your money you get an A5 sized manual and a single disc containing the programs, which consist not only of a word processor, but include a spelling checker and a datafile program.

Available at extra cost is a program called Disc Extension which links in, and lets you do such things as format and copy discs from within Brunword. It also provides the facility to archive and retrieve files to and from tape.

The 40-page manual appears to have been produced with a good quality dot matrix printer. The first 22 pages are devoted to the word processor and spelling checker, the remainder mostly to datafile and mail merging.

Unfortunately there is no index, nor appendices summarising the commands, which on occasions makes it hard work to find which command you require. However, the manual's content is good, and does describe all the commands. It includes worked examples, but I am not too sure about the order of things, particularly without the benefit of an index.

The word processor provides the expected facilities to enter and edit text, insert printer control codes, justify text and move, copy and delete blocks of text around a document. It also boasts one or two other unusual features which you may or may not consider to be useful. On the other side of the coin, one or two fairly basic features are missing.

How well does Brunword work? I have to admit that even after using it for a period, I still don't find it a particularly easy program to use. I think the main reason is that the commands used to carry out editing functions are called in one of three different ways.

Some involve the use of function keys, a method that I don't like as I always find it difficult to remember which key does what. Other commands are called by pressing the Control key and another key simultaneously, while yet a third command involves pressing the Escape key and then following it with another key – or, alternatively, pressing the Escape key again to obtain the main menu.

The problem is that while in most cases the keypress have been logically chosen to the extent that, for example, Control-L is used to set left margin and Control-R the right margin for a complete document, temporary margins for a paragraph are set with f1 and f2.

One surprising omission is that of the "delete line" command. You can delete single characters with CLR and DEL, and words to the right of the cursor with Control-D, but the only way to delete a complete line is by marking it as a block and deleting that. There's a facility to undelete single words, but not blocks of text.

Movement round the text may be carried out with the cursor keys. Shift plus left or right cursor will move to the beginning or end of a line; Control and left/right cursor will move to the beginning or end of the text; the screen may be scrolled with Shift and up or down cursor key, and about two-thirds of a screen can be "jumped" with Control and the up/down cursor key. Beyond this you are on your own.

There are no facilities to move to the start or end of a paragraph or a page, nor to Go to to a specific line or column.

One extremely irritating feature of cursor



Three in one

Flexibility and power are important in a word processor. Bill Tomlins puts the latest version of Brunword to the test

movement is that when you move the cursor up or down your text, as soon as you come to a blank or part-filled line the cursor jumps as far to the left as it can. This means that you are constantly having to move the cursor across from the left margin if you move back up the text to correct something and happen to cross a paragraph break in the process.

The maximum size of document that can be handled at one time is between eight and ten A4 pages of text, but facilities are provided to link files at print time.

Insert and Overwrite mode are both provided, and when you insert text into the middle of a document, as each word gets pushed off the end of a line it moves down to the start of the following line. While this keeps things tidy, it can be a little distracting to see the text beneath where you are working shuffling around all the time.

The Tab key may be used to move the cursor

across to user-definable tab locations, but Brunword seems to do this by inserting ordinary spaces into the text, so if you change your mind about a layout of columns of figures you are lumbered with deleting a lot of spaces.

Care must also be taken with using the justification commands, as they can easily destroy special layouts you have created. There is a rather laborious way around this, as Brunword provides a "hard" space – produced by pressing f4 – that cannot be altered by justification.

Text may be right-justified if required, but this is not the automatic process it is with most programs. The procedure is to type in your text, which will appear with a ragged right margin, then either use Control-W to right-justify the whole thing, or Control-B to justify a paragraph. When you justify the lot it is displayed on the screen a section at a time, a process which takes a few seconds.

You can un-justify text, either by paragraph or wholly. In addition, you can work with inset left and right margins. This is done on a temporary basis, paragraph by paragraph, which means you have to reset them every time you start a new paragraph. You can also centre complete paragraphs marked with temporary margins by a single keystroke – useful feature.

Blocks of text may be marked, using f6 at start and end of a block, and once the section has been highlighted you may delete it, copy it or move it to another part of the text.

Ram files

You may also make use of one of Brunword's special features, saving blocks, or for that matter the whole document, into any remaining space in memory. You have to name it, and Brunword creates its own internal directory of ram files. This assumes, of course, that there is sufficient room. If not, you are warned of the fact.

These ram files may be recalled and merged into the text at any time, or re-loaded in place of an existing document. When you come to save a document to disc you are asked whether you just wish to save the current text or the other files in memory as well. This facility is unusual and does have uses on occasions, but with the speed of disc drives, I wonder whether it isn't safer to just save them on to disc. (One unusual feature of Brunword is its ability to save files in encrypted form if a security code is specified first.)

Find and Replace facilities are provided and these allow you to search for a single word, or a group of words, and replace it or them with an alternative. Only the replacement text is case sensitive – so it will always replace with the case you specify – but it will find all occurrences, whatever their case.

Printing it out

Printing facilities are quite good, and you may insert control codes into the text to turn different printing effects on and off. They are set by default to Epson-compatible codes, but may be changed to suit your printer. These are not permanent changes, though they are saved with the text, so the solution is to save a blank file which will contain only the printer codes, and load it before starting a new document. Not ideal, but it works.

When printing you may specify the page length and the left and right margins, and also set headers and footers. You can specify whether the page number is to be printed in a header and whether it is to be to left, right or centre, but you may not change them during the course of a document, although a different one may be specified for odd and even pages. You may also specify the starting page number and, optionally, the pages you want to start and finish printing.

You may specify a set of printer codes to be sent to the printer before printing commences. This may be used to send "reset" codes, or codes to turn on NLQ, or whatever you want.

You may also link together of separate files so that they print as one long file with page numbers running through. This is done by creating a special link file containing only the names of the files to be printed, preceded by a line containing three ampersands. Headers and footers may only be changed when a new file is printed.

The Spelling Checker

Brunword is supplied with a dictionary of about 30,000 words and there is room for a further 5,000, give or take a few.

The reason for the limit is that it is loaded into memory before checking starts. The result of this is that the checker is fast – very fast as long as it doesn't come across any words it doesn't know. When it does, it pauses and you can choose between saving the word to the dictionary, continuing without change, or editing the word.

If you choose to edit you are returned to the normal part of the program and can correct the word. You then have to re-start the check by pressing the Escape key, then X and X again. If you make a lot of spelling mistakes this slows things down a lot.

Alternatively you may ask for Help, in which case Brunspell will search for any words it thinks are suitable and list them on-screen. When you see the one you want you may press Escape and select the word from the list with repeated cursor presses, finally inserting it into the document by pressing T. You can then continue.

There appears to be no way to view the contents of the dictionary, but you can remove a word by typing it in the text area, followed by pressing f0. If you then use the spelling checker, it will remove the word. It doesn't just remove one word, but the whole family. For example, Help, Helped, and Helping are the same family, and deleting one will also remove the others.

Single words may be checked during the course of text entry by pressing the f3 key. If you haven't yet loaded the dictionary, you will be prompted to load it the first time you press f3.

If you have added any new words to the dictionary you have to remember to re-save it to the disc before switching off, something which is easily done.

Sorting data

The Datafile program provides a simple card-index type of database into which you can enter names and addresses and other details.

As long as you enter data in the recommended format, the program can make use of it in a semi-intelligent fashion, depending on whether it is a company name or a person's name. You can sort the data into order and you may find or select according to criteria you specify and then save the selected items to a "quick" file, which may then be used for merging and printing.

Facilities are provided to print from within Datafile in a variety of different formats, or you may elect to carry out a mail merge using Brunword. This is done by resetting the computer, reloading Brunword and then merging a further program called Datalink into it. You then create your document in the normal way, but insert special codes into the text to mark which data field you want entering at that point.

Layouts are therefore quite flexible and you can, for example, arrange to print address labels with more than one label across the page, a feature lacking from some database programs.

When merging of data is taking place the text is automatically rejustified as printing progresses to make sure that any gaps or overflows of lines are corrected.

Conclusions

Brunword is undoubtedly good value for money, but only you can decide whether, in view of its intended use, its shortcomings are outweighed by the benefits.

My opinion is that it comes midway in the range of word processors. It provides a lot of features, some unusual, but it also seems to miss out on a number of features which I feel are basic – such as the ability to delete lines.

If you use complex layouts or need a word processor that has flexible editing facilities, I wouldn't recommend it. But for occasional use and straightforward letters – assuming you can remember the commands – it is certainly a lot better than many.

Brunword 464/6128
Brunning Software
34 Helston Road
Chelmsford
Essex
CM1 5JF
Phone 0245 252854
Brunword 464/6128 price: £25.00
Optional disc extension: £7.50

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MICRONET

Rim Writer

Peter Green lets you in on the agony and the ... agony of commercial programming

WHEN you buy a program, load it up and start zapping, how often do you think about the work that went into producing it? The blood, the coffee, the sweat, the coffee, the tears and the coffee? Freelance programming is not always a bed of roses – in fact it more often resembles the stuff you dig in round the roots.

Towards the end of last year I had invested a great deal of time in projects for not one but two software companies who had subsequently ceased trading, and cash in my pocket was becoming a fond but faint memory. So it was off to the PCW Show, demos in hand, to tout for business.

The most promising interview was with Palace Software, the Cauldron, Antiriad and Barbarian people. There were no machines spare on the stand to run my demos, so I was asked to visit Palace at their old offices over the Scala Cinema in North London the following week.

It was at this point that the Great Universal Probability Function smiled on me. One of my demos was something I'd been playing with as a possible original game in conjunction with a computer graphics designer I'd worked with before. He had sent me a lot of backdrops that he'd drawn for a Spectrum game which was abandoned by the commissioning software house – are you beginning to get an idea just how unstable the software industry is? – and wondered whether I could do anything with them.

The graphics were drawn in perspective and beautifully detailed. It seemed a shame to use them simply as backdrops. I hit on the idea of splitting them into a pair of planes, one foreground and one background, so that sprites would appear in front of the background, as normal, but disappear behind the foreground. This emphasised the depth of the graphics and my simple demo program looked very effective.

I showed the program to Richard Leinfellner, Palace's Technical Manager, and Pete Stone, the MD, and described this clever idea I'd invented. They looked at one another, and said: "There's this game we're working on called Rimrunner – we were only going to release it on the Commodore, but now you've got something similar working on the Amstrad..." The rest, as they say, is history.

An everyday tale of insect folk

Rimrunner is set in that rather crowded region, beyond the farthest reaches of the galaxy. The nice guys, called Insectoids, hang out on some really neat planetary systems which would be real garden spots were it not for the Arachnoids, who have this great idea they've discovered called genocide.

The Insectoid colonies are protected by force shields produced by hovering generators, however Insectoid warriors must patrol the perimeter of the colonies to recharge the generators or the shield will fail. This is a continuous job, like a Chinese magician spinning plates, although not many magicians are required to perform while under attack by kamikaze Arachnoid minions.

The Rimrunners use dinosaur-like mounts to carry them into battle, racing from generator to generator to maintain the shield. On screen, Dino stays central while the background scrolls past him. The more distant the scenery the slower it scrolls. It gives a perspective effect.

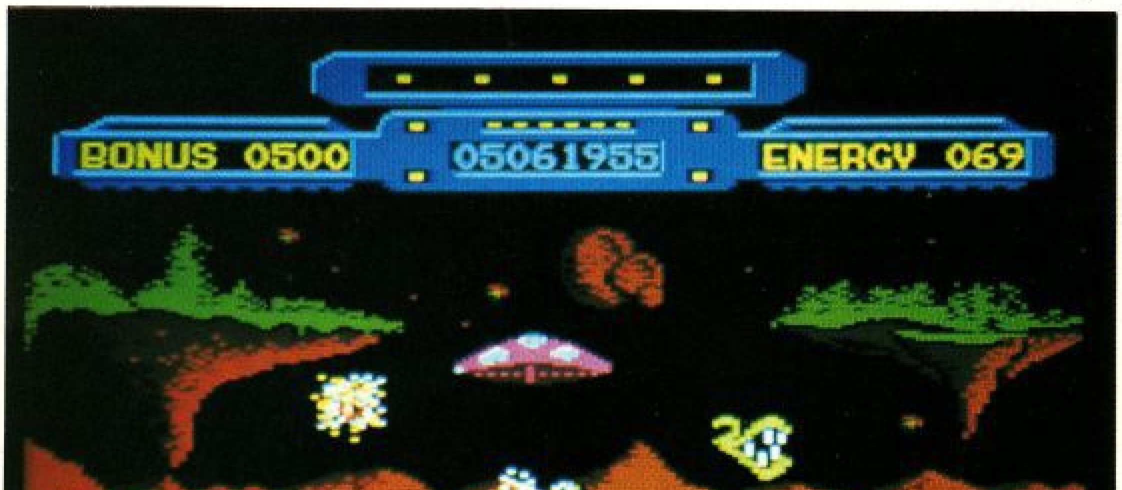
Programming Rimrunner has been interesting, not least because the above game description, the graphics data, and a few chats with Steve "I am NOT a programmer" Brown (the game designer), is all I've had to go on.

Difficulties with the early version of the game meant that the Commodore version was being re-programmed in parallel with my conversion. On a couple of occasions I've completed a piece of Rimrunner to discover it isn't quite what was intended. At times like these I smile grimly and wonder if Steve, who perfects his character animation by studying videos of himself frame-by-frame, would like any help with the Barbarian II decapitation sequence...

Data day problems

The first thing to do was to port all the data for the graphics and background maps for the main game and the inter-level screen from the Commodore 64 to the Amstrad. At the time (November) there was only one way to do this – the dreaded RS232, the "standard" serial interface with so many variations that software engineers have been known to gnaw off their own hands rather than attempt a match between two different systems.

Astonishingly, this stage of the operation gave us almost no trouble at all. We simply plugged a standard null-modem cable between the Commodore's add-on serial port and the Amstrad's RS232 interface, wrote a little bit of Basic at the Amstrad end to fetch characters from the port



RIMR

and write them to a disc file, and the three binary files went across first time.

It was when I got home and wrote a bit of code to display the Commodore format graphics on the Amstrad screen that I realised a large section of the Dino sprites had somehow been corrupted.

When I went back to Palace for another try and looked at a screen listing of the file, I saw it was full of Commodore Basic keywords. Somehow – we never found out how – part of the Commodore rom had been copied down over the graphics before we ported it across. All part of life's rich tapestry...

Hard and fast

As I've mentioned, Rimrunner was originated on the Commodore 64 and was intended to stretch that machine's hardware facilities to the limit.

Even when used without any programmer's tricks, the Commodore provides eight hardware sprites which can have three colours, appear either in front of or behind the background graphics and have automatic hardware collision detection between sprites or the background graphics.

In addition, a register on the graphics chip can be programmed to give a hardware screen shift of 0 to 7 pixels, and as the low-res mode only has four-colour graphics (two bits per pixel), the graphics can be stored in half the space that the Amstrad requires (16 colours need four bits per pixel).

What makes things worse is that the Commodore has programmable raster interrupts, that is it can be set up to generate an interrupt at the start of any desired screen scan line. You can use several interrupts, and at each one alter the sprite/background priority, reprogram the sprite registers to apparently produce more than eight sprites on the screen, scroll different sections of the screen by different amounts, and generally push the machine past limits that its designer's probably never dreamed of.

On the Amstrad, everything – sprites, scrolling, collision detection – has to be done in software. And even hand-crafted machine code cannot beat hardware-programmable facilities. Cunning stunts are the order of the day.





There are three basic areas to tackle. First, the sprites.

Page-aligned tables have to plotted into the screen using the "and mask/or graphic" system to overlay them correctly onto the existing background graphics. However, the entire screen update routine is going to end up taking several TV frames. The scrolling strips alone take up one entire frame – that's one fiftieth of a second.

I have to have two screens in use, one to be displayed while the other is updated, and switch between them in hardware by setting the screen base. (The same technique is used in Starglider, among other programs). Two screen buffers of 16K each means that half the Amstrad's memory is gone before I've written a byte of code.

Obviously I can't store the graphics in their expanded Amstrad format, and I can't store masks for each sprite to remove the background. My only possibility is to use the Commodore graphics directly and write a runtime routine which fetches Commodore graphics bytes and looks up the correct pair of masks and Amstrad screen bytes to use. This routine must obviously be optimised for speed, and Richard Leinfellner suggested an approach which I used and modified – page-aligned tables.

For each of the possible 256 Commodore graphic bytes, four "result bytes" are needed: the mask and graphic for the left and right bytes of the equivalent Amstrad screen pair. Rimrunner has four 256-tables, each set up so the nth entry is the required result for graphic byte n.

However, the tables are aligned on page boundaries, so that the zeroth entry has address xx00, the last entry has address xxFF. To do the conversion the Commodore byte is loaded into the L register and the H register is set to the page for the first table.

Now, without any other calculation, HL points to the mask byte we need. Incrementing H, one of the fastest Z80 instructions, now steps the pointer to the other three values we need.

This powerful technique for speeding up access to tables is so useful that it features in some way in almost all the other routines in Rimrunner. For example, the sound module that Palace provided used the IX and IY registers to access its data. I rewrote it using page- aligned variables, saving 500 bytes of code and making it run much faster.

Once the sprites are on screen, you have to get rid of them again! Normally the technique is to

UNNER

save the screen data in the rectangle where the sprite is to be placed, then copy the rectangle back to the screen to remove the sprite. With memory so tight, and speed at a premium, I needed a different solution.

I made the subroutine that draws the background on screen from its character map as efficient as possible (more page-alignment), so efficient that it can be used to erase sprites by just regenerating that section of the screen background.

Although the Amstrad has a hardware scroll, it is useless here because it affects the whole screen. I needed to scroll different areas of the screen by different amounts, so what's the fastest software scroll?

Well, two articles in ACU, one by ZZKJ and one by Justin, suggested two possible approaches.

In his article on 32-row text screens on the Amstrad (January 1988), ZZKJ showed how to fool the 6845 video chip into displaying two separate screens together at once. OK, thought I, let's try giving different hardware offsets to the two screen sections. Then part of the screen will hardware scroll and the rest won't, right?

Wrong. This is one straw too many for the poor 6845, which promptly has a nervous breakdown. I couldn't find any combination of register values which worked consistently on one machine, let alone on different Amstrads. It meant giong back to the drawing board...

Justin's Scroll (June 1987) is the one I used. This employs the Z80 block move instruction to shunt all the screen data along, but uses a whole sequence of single LDI instructions (16 clock cycles per byte shifted) instead of a single LDIR (21 clocks per byte).

Five clocks may not seem much, but multiplied by the large number of bytes I need to move, this gives a considerable speed increase at the expense of memory (always a tradeoff in programming). Rimrunner has a subroutine of 160 LDI instructions which is called once per screen line to scroll the two-character-high background strip, and called twice per screen line to scroll the four-character-high foreground strip.

Of course, the relevant sections of the background character map have to be scrolled too, and the new edges of the map and screen filled in with the appropriate data. Also, when Dino turns around and runs in the opposite direction, all the LDIs are overwritten with LDDs to reverse the direction of scroll.

Although this means Rimrunner couldn't be sold on eprom cartridges, there really isn't anything wrong with using self-modifying code in this way. If it's efficient, fast, works, isn't a confusing piece of spaghetti code and solves your problem, then I say the hell with critics.

One thing I had to give up was the very slow scrolling of the sky backdrop. This looks good on the Commodore but just wasn't feasible in the conversion. Sometimes you have to know when to quit.

The story so far

As I write this, Rimrunner is almost finished, but memory is starting to get tight. As it is I'm tucking bits of data and variables into the 48 bytes of undisplayed screen memory at the end of each 2k block.

It was just impossible to fit all three levels into the Amstrad at once, so lucky Amstrad games players will get an extra level, with two on each side of the cassette.

It's going to be a cracking game, which has forced me to invent a lot of new techniques and stretched my programming to the limit. The long working days have often drifted into sessions lasting till three in the morning – not forgetting the Monday morning I had to take a cab to Palace at 4.30 am to intercept Pete Stone on his way to France with the latest version and sit in King's Cross with the bag ladies until everyone else got into Palace at 9.30.

You still want to be a programmer?

REVIEW

MOTION CARRIED...

Alastair Scott discovers how a Camel can turn you into a wimp without giving you the hump

WOPS is Camel Micros' acronym for their windows operating system. It works in the wimp environment, much loved by writers of games with pretty pictures and no plot. Whenever you change a disc, the new disc is catalogued and a pointer appears.

To do something with a file, you move the pointer over the filename using joystick, mouse or keyboard, hold down the Fire button, move the pointer over the relevant icon and release the Fire button.

So to archive an entire disc to cassette you would click the Disc icon and carry it to the Cassette icon. To list a file to the screen, you would carry the filename to the Screen icon. You could make a 27-shade screen dump by carrying the Screen icon to the Printer icon and entering the filename of a picture stored on disc. The screen colours could be set first by clicking the Control icon and using the Wops' I INK a,b command.

Terse manual

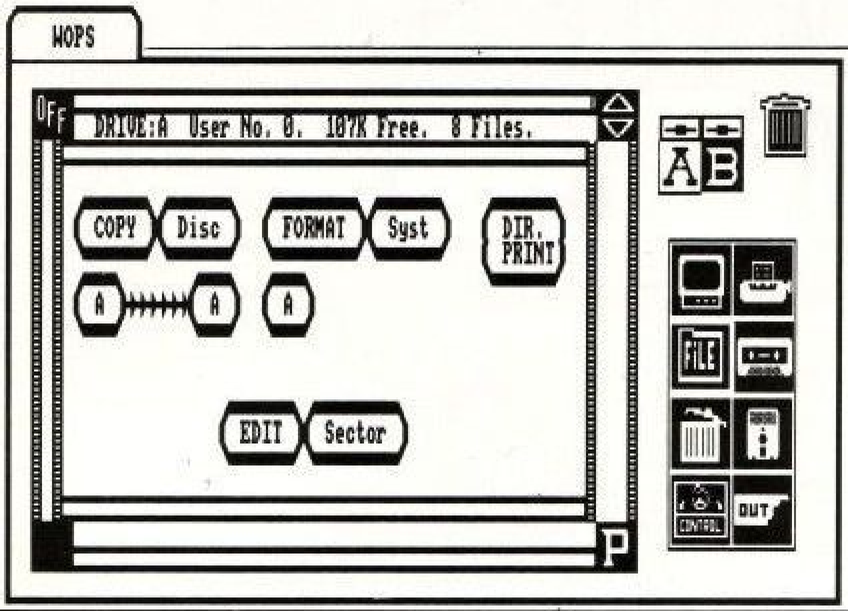
The program is nicely presented, and easy to use. The manual is disappointing – it clearly caters for those who know quite a bit about disc matters, and is lacking in detailed explanation of how to use the options.

There are a few problems with the program. The most serious is that forgetting to disable expansien roms before you run Wops will eventually cause it to crash. Unfortunately, disabling all expansion roms obviously prevents the Control icon recognising any external commands except the Wops and Amsdos ones.

The pointer (the P in Wimp) is a small, black, equilateral triangle. It flickers like mad when you move it, and is generally annoying. The oracle (John Keneally of Camel Micros) speaks: "The pointer isn't ideal. We will be improving it".

Due to the small size of the main window, the sector editor can only display 100 bytes of a sector at a time, instead of the more normal 256 byte half page, and editing is frustratingly slow due to an awkward input routine.

To change a value you have to move the cursor over the byte in question, press the Fire button (or Return), enter the replacement byte(s), and



The Icons' hidden secrets

press Return. You can't just type in replacement bytes under the cursor, as is the case with most sector editors.

The header information should, ideally, be available with the File icon, not relegated to an obscure place in the sector editor. (John Keneally: "Something we'll think about, certainly".)

On the positive side, the program is crashproof and the copying and formatting programs are outstanding. The provision for users with extra memory is one good reason for buying a rampack. Wops has obviously been designed with minimalist users in mind (464 owners with 64k and one disc drive), but is flexible enough to cater for those with extra hardware.

The tape-to-disc archive is superb. You can copy both sides of any disc to a single C60 tape, and retrieve it whenever you want.

The icing on the cake, however, is the way one-drive disc operations are tackled. The program can automatically detect when a disc is removed and inserted, so there are no "Put disc into drive A then press any key" messages.

Conclusions

If you only have the CP/M disc copying programs, or a disc utility that turns its nose up at funny formats or lacks some of the options I have mentioned, Wops is recommended.

Camel Micros is known for its outstanding after-sales service. It promises to, and does, consider any sensible suggestions for additions to Wops, and will make upgrades available at a nominal cost.

THE ICONS' HIDDEN SECRETS



DISC

The heart of the program. This icon gives access to various options, which are separate routines loaded from the master disc which (temporarily) replace Wops:

The disc copier copies an entire disc to another disc, reformatting the destination disc if appropriate. On a single drive system most discs can be copied using only two or three disc swaps. With 256K extra ram you would only need to swap discs once. There may be problems, however, using the Disc Copier on a 6128 with two disc drives.

The fast formatter formats and verifies a disc twice as quickly as the CP/M utilities. I believe extended formats allowing over 200K per side will be added in a later upgrade.

The file copier copies many files in one go, and very quickly, too. Wildcards are permitted.

The file editor allows you to load in an Ascii file and edit it – it is a simple text editor. Your revised copy can be saved or printed.

With the sector editor you can edit the disc directly, and search for strings of characters. Each sector is mapped, telling you the physical layout of each sector. You can find out where a given file is stored on the disc, and see its header information.

The sector contents can be viewed and edited in hex, decimal or Z80 opcodes, and can be printed out in full. There is an option that lets you automatically follow a file across the sectors it uses on a disc, as opposed to simply moving sequentially from sector to sector or track to track.



CONTROL

In theory, this allows you to use RSX commands held in expansion roms. In practice, using RSXs other than the standard Amsdos ones will probably end in a crash, but the option is there if you want to try it. You might get away with it, but the great majority of Utopia commands, for example, ended in disaster. However, Wops sets up some RSXs of its own. Examples:

I SPEED sets cassette save speed (1000-4000 baud).

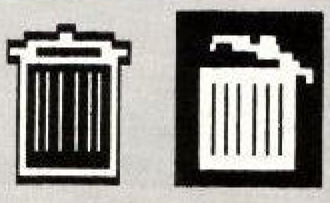
I MEMORY allows you to use any extra memory you have fitted. If you have a 256K Ram pack, entering I MEMORY 16 will allow you to copy any disc in one go. I MEMORY 4 allows you to use the 6128's extra 64K.

I PRINT allows you to send control codes to the printer.

I TRACKS allows you to format a disc with up to 42 tracks per side instead of the normal 40.



The three icons around the main window return you to the disc catalogue (OFF), scroll the main window up or down (for easy movement through large directories), and direct all output to the printer (P).



DUSTBIN & OPEN DUSTBIN

Allows you to erase and unerase files.



FILE

Allows renaming and setting of file attributes.



OUT

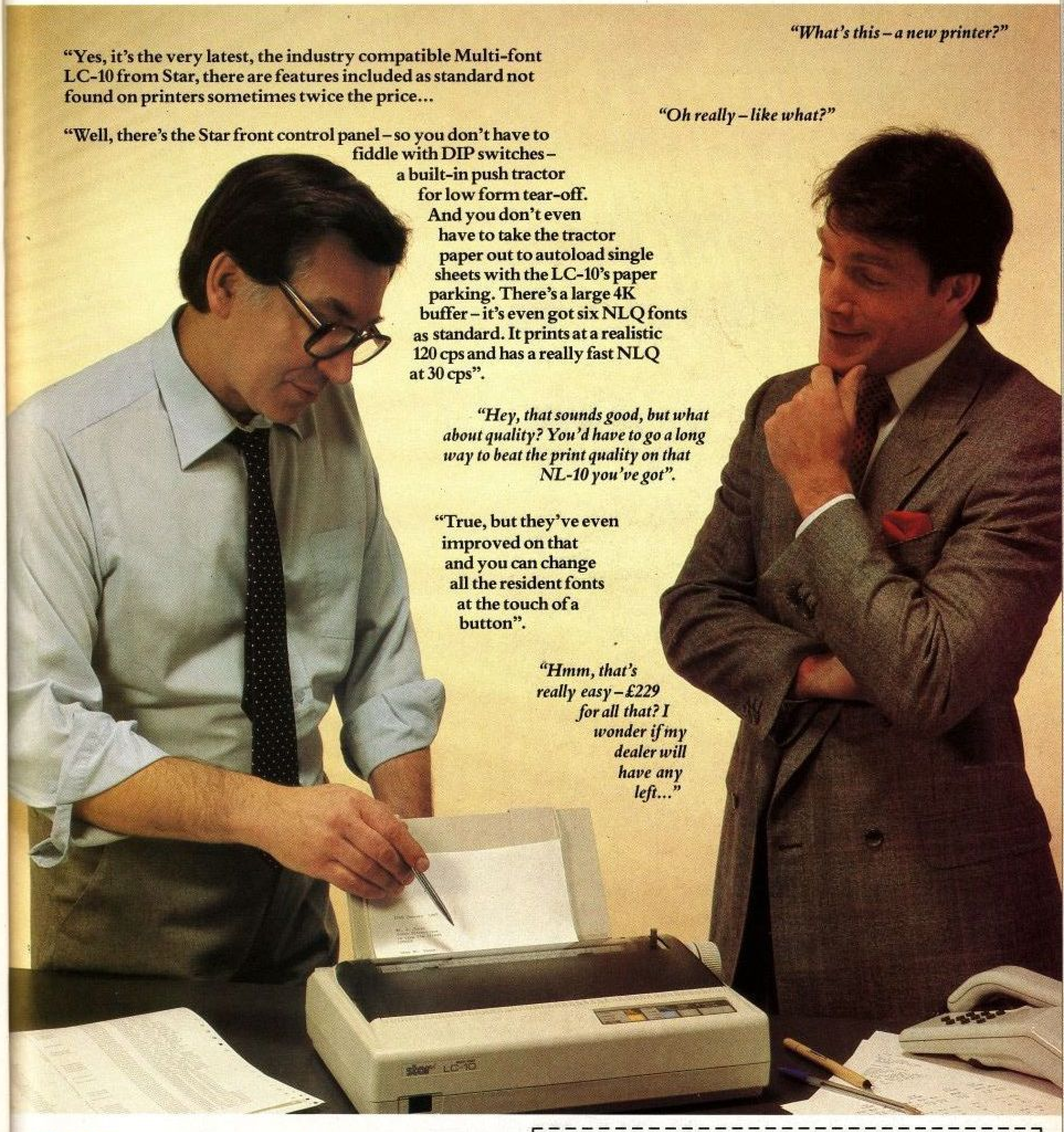
Returns you to Amsdos or CP/M. With the Amsdos option, Ctrl+Enter is redefined to produce RUN"WOPS" so you can re-enter the program with a simple keypress.

GALLUP SOFTWARE CHART

Pos	Move	Title	Comment	Last month	Market strength
1	Non-mover	**Ghostbusters** *Mastertronic* 1.99	Great film, great music, great price. Shame about the conversion.	1	100
2	Up	**Steve Davis Snooker** *Blue Ribbon* 1.99	The original full-price version has sold over 180,000 copies to date. Tests the cuemanship of even the most expert player.	13	89
3	Non-mover	**The Way of the Exploding Fist** *Ricochet* 1.99	The karate game which started it all. IK+ is better, but this is a cheap bit of computer game history.	3	62
4	Up	**Trap Door** *Alternative* 1.99	Berk, Druk and Boni star in a game which is still a firm favourite with the Rawlins family. Great animation but tricky to play.	11	55
5	Down	**Pro Ski Simulator** *Code Masters* 1.99	Still on the piste, but a poor game by Code Masters standards.	4	54
6	Up	**BMX Simulator** *Code Masters* 1.99	A totally RAD game for those with a penchant for pedalling. Jump the ramps, race a friend. GO FOR IT. Been around a very, very long time, and it's climbing the charts again.	10	51
7	Up	**3D Starfighter** *Code Masters* 1.99	Billed as the first shoot 'em up from the Oliver twins, a surprisingly deep budget title with solar systems to navigate around and convoys to defend.	12	51
8	Down	**Out Run Sega** *US Gold* 9.99	Running out of steam this one, and deservedly so.	5	50
9	Down	**Platoon** *Ocean* 9.95	Gimmicky and bloodthirsty Ocean title. Very hard to get into, but still good.	2	49
10	Down	**Grand Prix Simulator** *Code Masters* 1.99	Why buy Super Sprint when this is better and cheaper? Why buy this when Jet Bike Simulator is so very much better?	9	48
11	Down	**LA Swat** *Mastertronic* 1.99	Patrol the streets, watch out for muggers and terrorists, shoot to kill, but try to avoid innocent bystanders. Awfully boring, and on the way down after just one month.	6	48
12	Down	**Skate Rock** *Mastertronic* 1.99	Bubble Bus programmed mode 0 game. All skate and no rock. How did it get this high up the chart?	7	48
13	New entry	**Super Stuntman** *Code Masters* 1.99	Wot no Simulator? A real wreckers game where you score big points for spectacular crashes.	NE	47
14	Down	**Predator** *Activision* 9.99	The game of the Schwarzenegger movie. The name's bigger than the game, and about as boring.	8	43
15	New entry	**Fruit Machine Simulator** *Code Masters* 1.99	All the fun and flashing lights for a one-off budget price payment. Apart from that, just like the real thing.	NE	42
16	Down	**Jet Bike Simulator** *Code Masters* 1.99	The most playable racing game on the CPC. Great courses, top notch collision detection.	14	41
17	Down	**Dizzy** *Code Masters* 1.99	Budget Sorcery. Not exactly the Darling's finest hour. Sometimes price doesn't matter. In this case two quid can be better spent elsewhere.	15	40
18	Down	**Popeye** *Alternative* 1.99	Fun and frolics with Bluto, Olive Oyl, et al. The price is right.	16	36
19	Down	**Soccer Boss** *Alternative* 1.99	You too can be Bob Maxwell and control the whole first division if you like. No options to buy teams from rock stars though. Simple but absorbing.	18	35
20	Down	**Ghost Hunters** *Code Masters* 1.99	Early Olivers' spritey game. Well liked, but beginning to look a little dated now. Wave bye bye.	17	34

Non-mover — Up — Down — New entry

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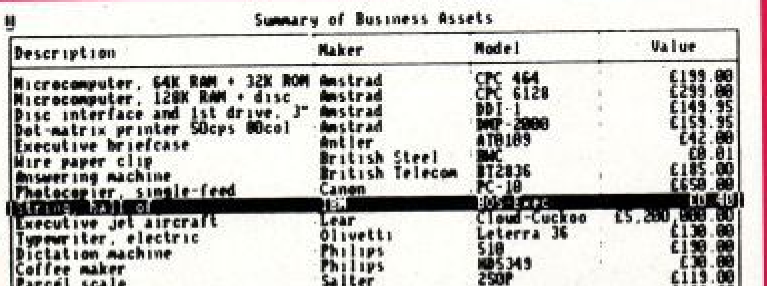
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[illegible]	[illegible]	[illegible]	[illegible]
Executive jet aircraft	Lear	Cloud-Cuckoo	£5,200,000.00
Typewriter, electric	Olivetti	Leterra 36	£130.00
Dictation machine	Philips	510	£190.00
Coffee maker	Philips	HD5349	£30.00
Parcel scale	Salter	250P	£119.00
Microcomputer, 48K	Silicarn	Trumspec	£129.95
Letter scale	Waymaster	375KL	£10.00
Totals:			£5,202,294.26

Top record : 0001 [M] for menu

ALL THIS POWER ...

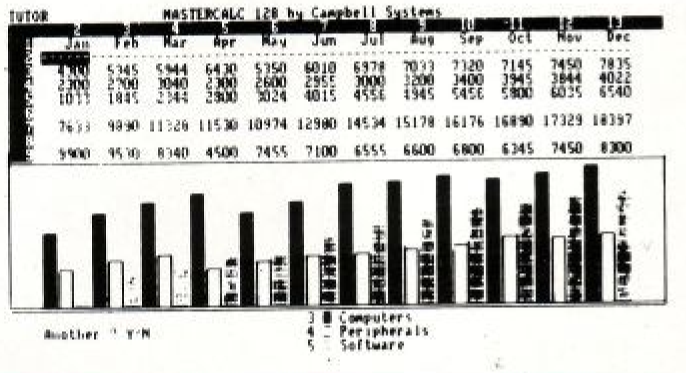
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1 How old are you?

☐ Under 12 ☐ 13 to 16 ☐ 17 to 25 ☐ 26 to 40
☐ 41 to 50 ☐ 51 to 60 ☐ Over 60

2 Are you:

☐ Male ☐ Female ☐ Not bothered as long as the sun shines

3 You own or intend to buy:

Already own	Intend to buy		Already own	Intend to buy	
☐	☐	CPC 464	☐	☐	DDI-1
☐	☐	CPC 664	☐	☐	FD-1
☐	☐	CPC 6128	☐	☐	Modem
☐	☐	Colour monitor	☐	☐	Printer
☐	☐	PCW 8256	☐	☐	Romboard
☐	☐	PCW 8512			
☐	☐	PCW 9512			
☐	☐	PC 1512			
☐	☐	PC 1640			
☐	☐	BBC Micro			
☐	☐	Commodore 64			
☐	☐	Spectrum			
☐	☐	Amiga			
☐	☐	Atari ST			

4 Which 3 programs spend the most time loaded in your computer?

____
____
____

5 Rate this month's articles from 0 (the pits) to 10 (wicked):

☐ News
☐ Letters
☐ Hairy Hackers
☐ Gallup chart
☐ Adventures
☐ Reflections Listing
☐ LSB
☐ Applications Advice
☐ Basic Tutor
☐ Auntie John
☐ Rim Writer

Games reviews:

☐ Stairway to Hell
☐ Enlightenment
☐ Fruit machine Simulator

6 How much of ACU would you like to see devoted to various topics?

More	Less	Same	
☐	☐	☐	Games software reviews
☐	☐	☐	Business software reviews
☐	☐	☐	Educational software reviews
☐	☐	☐	Hardware reviews
☐	☐	☐	Hardware projects
☐	☐	☐	Basic programming
☐	☐	☐	M/code programming
☐	☐	☐	Other language programming
☐	☐	☐	Communications
☐	☐	☐	Game maps
☐	☐	☐	Program listings
☐	☐	☐	Other__________

7 How many hours a day do you spend at your computer? __________

8 Games software reviews

- Are the games reviews:
☐ Too detailed ☐ About right ☐ Not detailed enough
- Are the games reviews:
☐ Too long ☐ About right ☐ Not long enough
- Are there enough game screen shots?
☐ Yes ☐ No
- Would you like to see the games ratings system changed?
☐ Yes ☐ No
If Yes, how?

____
____

9 Business software reviews

- Are the business reviews:
☐ Too detailed ☐ About right ☐ Not detailed enough
- Are the business reviews:
☐ Too long ☐ About right ☐ Not long enough
- Would you like to see ratings system brought in for business software reviews?
☐ Yes ☐ No
If Yes, how would your system work?

____
____

10 Amstrad Computer User

- Are you a subscriber? ☐ Yes ☐ No
- Are you a user club member? ☐ Yes ☐ No
- How many issues of ACU have you bought in the last 12 months? ☐
- How many other people look at your copy of ACU? ☐
- Which of these magazines do you read?

☐ Popular Computing Weekly ☐ Ace
☐ Personal Computer World ☐ Beano
☐ The Games Machine ☐ Computing with Amstrad
☐ C+VG ☐ Amstrad Action

- Which computer shows do you go to?

____
____

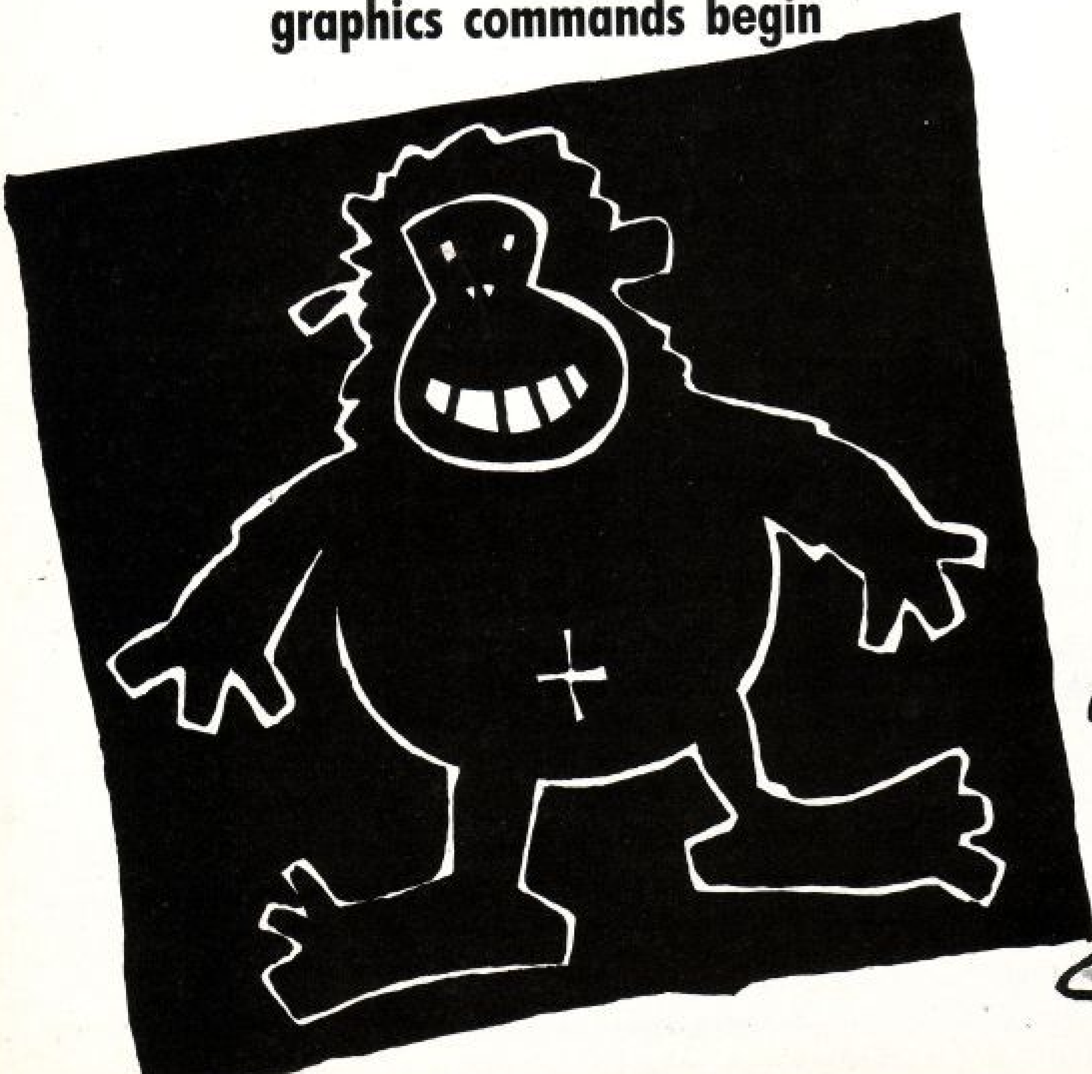
- If you were the Editor of ACU, how would you change it?

____
____
____
____



The origin of the CPCs

Stop monkeying around at the back. Jeff Walker is here to show you the point at which all the graphics commands begin



THE text cursor is very familiar to us because we are used to seeing it represented on the screen as a square or rectangular blob. To position it we use the LOCATE keyword. The range of coordinates used with LOCATE differ with which mode you are in, but, whatever the mode, you will supply a column and a row as the position to display a character on the text screen. The top left position is 1,1 and the bottom right position, in mode 2, is 80,25.

We have another cursor, the graphics one, which is not so familiar because it is invisible to us. This cursor operates only within the graphics window, which on EMS (early morning startup) exactly overlays the whole of the visible text screen.

This graphics window has a very different coordinate system to the text screen, and it is well worth taking the trouble to familiarise yourself with it.

Cursor at home

The home position of the graphics cursor is at point 0,0 within the graphics window. At EMS this puts it at the bottom left-hand corner of the screen. We can adjust this position to suit by means of the ORIGIN keyword. The syntax is:

```
ORIGIN xpos,ypos
        /     |
   pixels  pixels
   across    up
```



The parameters xpos and ypos refer to pixel coordinates, as opposed to text coordinates. Unlike text coordinates, whatever mode you are in the graphics coordinate system remains the same. At EMS the bottom left of the window is 0,0 and the top right is 639,399.

To reposition the graphics origin to about the centre of the screen you would issue the command ORIGIN 320,200 – that's 320 pixels across from the left, 200 pixels up from the bottom. This point has now become position 0,0.

The size of the graphics window hasn't changed, it still covers the whole of the screen. So what are the new coordinates of the bottom left-hand corner?

Well, they've become negative, –320,–200. That's 320 pixels left from home, 200 pixels down from home. A picture tells a thousand words (see Figure I).

A window in space

A graphics window can be defined in the same way as a text window. The difference is you can only have one graphics window. Again, the keyword ORIGIN is used to alter the size and position of the graphics window, but we need to add four more parameters. That's six in all – enough to frighten off beginners, so take the next bit nice and easy. The syntax is:

```
ORIGIN xpos,ypos,left,right,top,bottom
```

The parameters xpos and ypos are the same as before. The parameters left, right, top and bottom describe the boundary sides of the new window. The easiest way to remember what these six parameters should be is to split them into two groups.

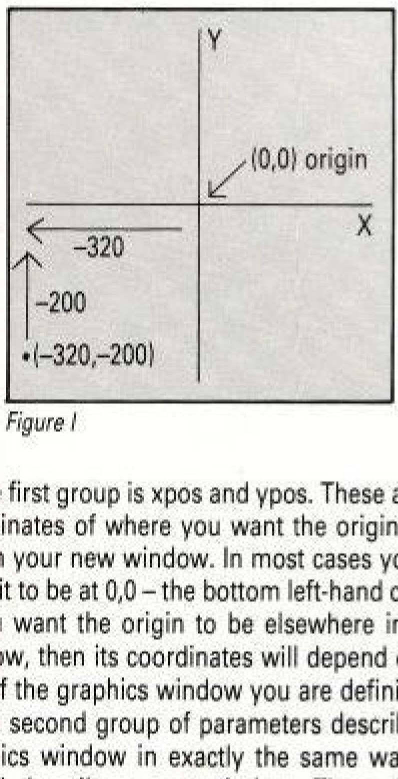


Figure I

The first group is xpos and ypos. These are the coordinates of where you want the origin to be within your new window. In most cases you will want it to be at 0,0 – the bottom left-hand corner. If you want the origin to be elsewhere in your window, then its coordinates will depend on the size of the graphics window you are defining.

The second group of parameters describe the graphics window in exactly the same way you would describe a text window. The only difference is that for a graphics window the numbers can be much larger.

The parameters for the default graphics window are 0,0,0,639,399,0. The first two – 0,0 – tell the system that we want the origin to be at the bottom left-hand corner, the next four – 0,639,399,0 – tell the system that we want the left-hand edge to be at 0, the right-hand edge to be at 639, the top edge at 399, and the bottom edge at 0.

```
10 MODE 1:BORDER 13
20 INK 0,13:INK 1,0:INK 2,26
30 ORIGIN 0,0,100,539,349,50:CLG 1
40 ORIGIN 0,0,92,535,358,58:CLG 2
50 GOTO 50
```

Listing I

In the shadows

Let's do a little programming. One of the easiest things we can do with ORIGIN is create a window with a little shadow. We simply define a window, clear it to black using CLG (the graphics window version of CLS), then define the window again, slightly offset from the first, and clear it to another colour. This is shown in Listing I.

Notice that CLG takes a parameter, the pen number of the colour we want the window to be. It's a bit like a PAPER x:CLS rolled into one.

It's important to remember that we haven't got two graphics windows here. The second ORIGIN command overwrites the first just as a WINDOW#1 would overwrite a previous WINDOW#1 if we were defining text windows. We only have one graphics window, which is a shame, but we have to live with it.

Squaring up

Another interesting thing you can do with ORIGIN is plant little DRAWings around the screen without having to change the coordinates in the DRAW commands. As an example we'll plant a few simple squares (see Listing II).

Notice how quickly the 20 squares are drawn? The other way to do this would be to MOVE x,y in line 140, in which case the DRAW parameters would have to be recalculated for each square. This way we don't have to calculate anything so it all happens that much quicker.

You could apply this technique to any shape or shapes you wanted to duplicate in a different screen position, no matter how complicated.

As a variation on Listing II, try Listing III which is a very quick way to draw pixel-accurate filled boxes in Basic.

Off the screen

Did you notice how some of the squares drawn by Listings II and III went off the edge of the screen? This isn't a bug, it is a feature that restricts the action of the graphics commands to the area of the graphics window.

It is easy to think we can draw off the screen by defining an enormous graphics window, but we can't. Although the CPC will let you define a graphics window far larger than the actual screen area, in practice it only remembers the bit it (and you) can see.

So, if you defined a graphics window with ORIGIN 0,0,0,32767,32767,0 and then tried to PLOT 32767,32767, your computer would not complain. It would simply laugh up its sleeve and pretend to do what you ask. In actual fact it has done nothing. The moral of this story is, there's not much point in defining a graphics window that stretches past the visible boundaries of the monitor. Or is there?

All change

The 464 has no GRAPHICS PAPER command.

```
100 MODE 1
110 FOR loop=1 to 20
120 x=ROUND(RND*639)
130 y=ROUND(RND*399)
140 ORIGIN x,y
150 GOSUB 200
160 NEXT:END
199'
200 DRAW 100,0
210 DRAW 100,100
220 DRAW 0,100
230 DRAW 0,0
240 RETURN
```

Listing II

Here lies the only reason I can find for defining a graphics window off the screen.

The action of CLG x is to clear the graphics window to graphics paper x. It is the only way in Basic to change the graphics paper on a 464. Soyou would issue an ORIGIN 0,0,999,1000,1000,999:CLG 3 to change the current graphics paper to the colour in pen 3. Then you would reset your graphics window to whatever it was before, probably ORIGIN 0,0,0,639,399,0, the default setting.

Similarly, the 464 has no GRAPHICS PEN command, so the only way to change the colour of the graphics pen from Basic on a 464 is to PLOT a point or DRAW a line in that colour first. So as to not spoil the screen display, we would use a command such as PLOT 999,999,3 to change the graphics pen to the colour in pen 3 then MOVE back to wherever we were before we decided to change the pen colour.

This a highly unsuitable state of affairs and I would recommend 464 owners who wish to mess about with graphics to acquire a toolbox that has the commands GRAPHICS PEN and GRAPHICS PAPER in it.

Well, that's ORIGIN for you. I'd have liked to have talked a bit more about PLOT and DRAW, and particularly their relatives PLOTR and DRAWR, but space and time dictates all. Perhaps another month. Tarra.

```
100 MODE 0
110 FOR loop=1 to 20
120 x=ROUND(RND*639)
130 y=ROUND(RND*399)
140 col=ROUND(RND*13)
150 ORIGIN 0,0,x,x-100,y,y-100
160 CLG col:NEXT:END
```

Listing III

Utilities Unlimited!

We've brought together the very best non-games programs culled from past issues of *Amstrad Computer User*.

These clever programs cover animation, business, music, games hacks, and much more. Whatever your interest, there's something here for you – and at a very special price.

In some cases you will need to refer to the issue of ACU *in which the programs appeared. In the list below these are shown by ★ followed by the month. You can send for the eight issues at the special price of £6.60 by using the order form.*

Elite Disc Hack – add millions of credits or Elite status to your commander.

Justin's Scroll – discover how the experts program a scrolling landscape.

RSX Lister – list all RSXes including those which have been soft loaded.

Printer Spooler – carry on using the computer while the printer is working.

Epson Dump – produce hard copies of the screen display on the DMP2000/3000.

Organ – turn your micro into an impressive musical keyboard.

ZX Loader – load Spectrum binary files into your CPC. ★ *July 1986.*

Homespread – prepare your budget with this simple but flexible spreadsheet. ★ *May 1986.*

Amgraph – produce bar graphs, pie charts from a table of numbers. ★ *November 1985.*

Diary – bring some order to your busy lifestyle (disc only). ★ *May 1985.*

Mode 3 – Mode 0 with four colours in only 8k, with accompanying demos. ★ *January 1986.*

Animator – become the new Walt Disney. Built-in 'tweening' facility. ★ *April 1986.*

Trace – re-direct the trace output to a window or printer. ★ *December 1986.*

Sorcery Plus Hack – modify the sprites and increase your survival chances. ★ *January 1986.*

Chord Finder – learn the difference between a suspended and flattened chord. ★ *September 1985.*

Jet Set Willy Hack – infinite lives and a magic teleport facility. ★ *September 1985.*

Double Height Print – expand your horizons with these tall characters. ★ *September 1985.*

Tape price £7.95 Only £2.95 with a new subscription or subscription renewal

Disc price £9.95 Only £3.95 with a new subscription or subscription renewal

All programs work on Amstrad CPC 464, CPC 664 and CPC 6128 computers. You can list and adapt all the Basic files – an excellent way to improve your programming skills.

TO ORDER PLEASE USE THE FORM ON PAGE 65

ENLIGHTENMENT – DRUID II

ONCE upon a time there was a druid. He was a particularly magical druid and had spent no little time in the hire of Firebird cleaning out a maze with the aid of his fizzling forefinger and helpful cohorts.

Alas, those days had long passed, and now he was reduced to the usual Druidic mistletoe gathering and rune-casting when one day a deep voice spoke to him out of the sky.

"Lo! The Time of Sequels is upon us, as was forecast in the Book of Marketing. Get thee hence to a cassette or disc, where thou shalt partake of Druid II or, as I shall decree to make the game sell better, Enlightenment.

And mark well that your finger is in tip-top zombie zapping form; likewise ensure the old pins are up to prolonged scurrying. For many will be the mazes, numerous the nasties and multifarious the monsters.

As it was before, so shall it be again. Especially the sales figures."

And with a swirl of music (was that the theme from Star Trek?) the voice faded to silence. The druid chewed his beard, and made for the game.

He found himself in familiar territory. The gamesfield occupied the top two-thirds or so of his monitor screen (even druids have CPCs), and he could move fairly freely anywhere where there were not trees or more actively nasty objects. The lower portion of the screen displayed many things.

Perhaps the most important things were the personal strength and zapping power meters. If either of these two got too low, the druid was in dead trouble.Also, as he wandered around the place, he could pick up spells. These were displayed in windows, and by pressing the appropriate button on his druidic keyboard he could select and make use of such magic as he deemed necessary.

And deeming correctly was the very essence of success. While he searched each level for the key to the next, he was under constant attack from the Forces of Utter Unpleasantness.

To give an example, while he could cut a swathe through the hoards of Undead with a firestorm, perhaps he should keep that up his mystic sleeve for a more worthy foe and just dispose of the minions with the standard-issue gigavolt pinky powerdriver. For greater evil awaited him at every stage.

But there were allies, or as Holmes would say "elementals, my dear Watson". Elementals are creatures of pure element, where the elements are the ancient Greek set of fire, earth, air and lager, sorry, water. By selecting the Commodore logo (erm, look guys, perhaps you could have changed this for the Amstrad version), the druid (or a druidic pal) could fearlessly send an elemental into combat. Fearless, because while the elly soaked up the punishment the druid could be safely hiding.

The most powerful spells must be kept for a very special purpose. There are classes of monster which are immune to anything but the strongest magic; these demon princes laugh at firestorms and sneer at water elementals, they even thumb their noses at HM Inspectorate of Taxes.

And the final spell, to be cast in the presence of the Grand Bit of Nasty Work Himself, is the White Orb. Do this and the land is free from the curse once more and you have won enlightenment. For you, yes, even you, are the druid . . .

Let's not beat around the burning bush, if you enjoyed Druid/Gauntlet with its mixture of maze and magic then you'll enjoy Enlightenment even more.

The graphics are as good as Mode 0 get, the action suitably frantic, and the various levels sumptuously equipped with enough mystic machinations to keep the would-be Druid (and friend – there is a two-player option as in the original) well and truly enmeshed.

If, on the other wand, you didn't, then Enlightenment is unlikely to snare your soul. Instead you can wonder why the hero's name changes from page to page in the slightly sus handbook.





Author: Paul Hutchinson for Firebird Gold
Price: £8.95 (tape) £14.95 (disc)

Nigel

I'm still struggling as an Earth Lord, and I bet Druid III appears before I get anywhere near being an Overlord. But that won't stop me trying.

What more could any normal person want than the chance to fight off the undead with crucifix, zappy fingers and a sackful of hoopy spells? Enlightenment is a worthy sequel to Druid.

17/20

Liz

Yes, well, I suppose if you enjoyed Druid, you'll enjoy Enlightenment. You can't fault the game – it's very fast, the graphics are excellent, it's difficult, it's absorbing, two people can play at it. Why then am I not suitably impressed?

I don't know. Perhaps I'm getting fed up with sequels that look a little too much like the originals. Perhaps it's because I expected too much after reading the manual. Or perhaps it's because of that Commodore logo. Yeah, that must be it.

13/20

Colin

Druid was an unbelievably playable game. Not suprisingly, so is Druid II. The plot has changed, and so has the scenery, but the gameplay remains basically the same. And there's nothing wrong with that.

In many eyes Druid has already gone down as a classic on the CPC. The same fate is surely in store for Enlightenment because, if anything, I think it's a touch better than the original.

16/20

STAIRWAY TO HELL

I must confess that my heart sank as I was handed this copy of Stairway to Hell from Power House to review. The cover illustration depicts Our Hero, bearing more than a passing resemblance to Indiana Jones the morning after 15 pints of Grimble's Old Sock Rotter, fleeing in horror from what appears to be a pair of highly agitated, red flannel Long Johns hanging on a washing line.

Although fleeing from dubious underwear would seem to be a perfectly reasonable reaction, it is not the kind of behaviour you would normally expect from the macho-hero stereotype.

As I waited for the tape to load, my mind reeled. Was this the shape of things to come, the beginning of a trend? Is underwear about to do for computer games what martial arts, laser beams and mighty warlocks have done before? Are we about to see a string of titles like Corset Killers, Jack the Stripper or The Y-fronts that ate Balham?

Fortunately for my sanity, at this point the tape finished loading and I was soon able to discover that the pulp magazine-style cover does less than justice to the game inside.

Stairway to Hell consists of 15 screens, each representing a cavern en route to the Earth's core. The object of the game is to collect the treasure available in each of the caverns.

A nice touch, all but the last screen can be accessed for practice by using the left and right cursor keys. The controls are simple – although the presence of a suicide button puzzled me for a while – and are used to move Our Hero through each cavern avoiding the various nasties as he goes. And that, quite simply, is that.

Simple though it sounds, this game has a lot to offer. The settings are many and varied. An old mine working gives way to a surreal factory, complete with vast, thrusting pistons; barren snowscapes lead on to steamy jungles, filled with exotic plants and giant, whirring insects; an underwater vista is the forerunner of a scene straight out of Dante's Inferno – dancing skeletons amid fire-belching craters.

The graphical realisation of each of these scenes is excellent and is enhanced by the imaginative sound effects.

Each screen poses a new set of problems; obstacles to be overcome and dangers to be avoided. Some are more obvious than others, although a good deal of thought is required on each occasion. For example, it was only after becoming trapped in a jungle pit without being able to move in any direction that I discovered the reason for the suicide button – a drastic measure, but obviously a necessary one.

The nasties come in various guises, each terminating one of Our Hero's five lives by causing him to explode quite dramatically. Once these problems have been figured out, however, all that is required is a bit of manual dexterity and a deal of persistence.

That said, there are plenty of challenges in this game and it is likely to hold your attention for some time.

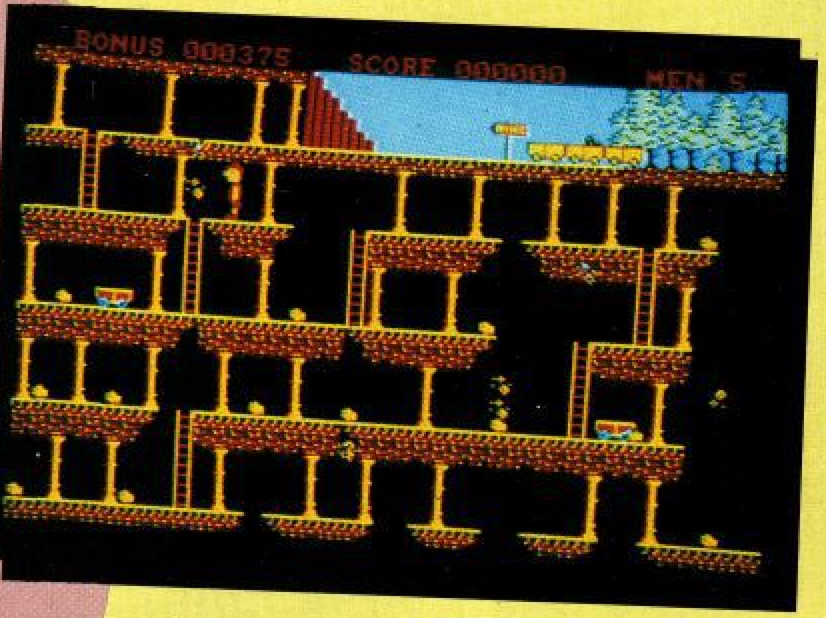
One minor niggle. I was unable to find a way of saving a game. This is awkward in that all the screens have to be completed to succeed. It would be helpful to be able to store a partially-completed game.

I found Stairway to Hell intriguing rather than wildly exciting – the kind of game that would appeal to those who enjoy a puzzle rather than the all action shoot-'em-up.

I doubt whether it is destined to become a classic, but it is well worth investing in if you enjoy a more considered mode of entertainment or if your joystick fingers are beginning to stiffen with age and overuse.

Colin

Author: Kevin Stone for Power House
Price: £1.99 (cass)



Nigel

The Power House hasn't exactly got a reputation for major budget releases, and Stairway to Hell isn't going to get it one.

It's a competently programmed platform and ladders game. There are a few buggypoos, but nothing to lose hair over, and each screen is well designed and difficult to get through. The action is fast but not furious. The explorer isn't cute enough.

Stairway to Hell has the air of a vintage wine about it – old and dusty and probably best left on the shelf.

11/20

Colin

What a shame Stairway to Hell only has 15 screens. The practice mode let me whizz through all but the last of them, and very nice they are too.

If someone had had the foresight to release this game two years ago it would probably have reached a fairly high place in the charts. As it is, with Power House still to prove itself in the market place, Stairway to Hell probably isn't going to be the mould breaker. But it deserves to, and I hope it does.

17/20

Liz

Are you sure this is a new release? The copyright message on the loading screen says 1986. Having said that, I wouldn't have guessed this game was programmed two years ago. Ladders and platforms go in and out of fashion. At the moment they seem to be out, but that doesn't make this a bad game.

Stairway to Hell is a good solid game. Nothing special, but a lot better than some I've seen poke their heads out the Power House stable door.

14/20

FRUIT MACHINE SIMULATOR

Nigel

I HAVE got to admit that I'm a sucker for fruit machines. There have been a number of previous attempts at simulating one on the CPC, but all have failed rather miserably. This effort from Code Masters, however, takes the biscuit.

It features all the sights and sounds of the real thing and the rock and rolling reels are unbelievable. Another game that shows exactly what can be done on an Amstrad.

17/20

Liz

PEOPLE who pour money into fruit machines ought to have their heads examined. If computer simulations of these coin chompers stop the rot, then it's all right by me.

The Oliver twins have once again excelled themselves; whatever they do, they seem to do infuriatingly well. I do worry, though, that maybe this will encourage a few more idiots on to the real thing – it's that good, you see.

14/20

Colin

A VERY nice simulation indeed, but a little boring. The trouble with fruit machine simulators is that the element of risk is missing – you can't lose because you're not gambling with real money.

But it's very nice to look at and listen to; the flashing lights, sound FX, music and speech synthesis are all up to Code Masters' very high standard. There's not a lot to shoot at, though. 14/20

14/20

THERE can be few contraptions more addictive than the modern fruit machine. Now the Oliver twins have brought those same addictive qualities to the CPC in the form of Fruit Machine Simulator. "Just like the real thing", says the hype on the box.

The features have certainly been packed in. At first sight the sheer volume of colour and information on the screen looks totally confusing. And so it is, until you actually start playing. Then, as you spin the reels, feature lights flash and dazzle your eyes as the sound effects assault your ears. Just like the real thing, I thought.

Up to four players can play, each taking a turn at inserting up to about £1 into the machine, for which you receive credits (it's 10p a go).

Pressing the spacebar spins the reels. They really do spin, very smoothly and at very realistic and different speeds. Each reel even rocks a little as it settles before stopping.

All the features you'd expect on a real fruit machine are there – hold, nudge, gamble – plus a host of extra features that can be got at by lighting up the cash-bash line.

The four extra features are Nudge Box, Cash Box, Winning Streak and Skill Climb. Each box flashes in rapid succession, and you stop it on one by hitting Return.

The Nudge Box gets you the amount of nudges it's collected. You can take what's there or gamble for more. Fruit Machine Simulator even features a Compunudge (Go for it George!).

Like the Nudge Box, lighting up the Cash Box gets you whatever is in the Cash Box. Again, you can gamble it to try and win more.

The Winning Streak assures you of a win every time you spin the wheel. After each win (or loss, if you gamble the win and lose) you gamble again to see whether the Winning Streak is to continue.

The Skill Climb is a series of gambles up a money ladder. Each rung gets faster and harder to win.

There is also a box that collects money called Party Time. One of the features of Fruit Machine Simulator is – again like the real thing – you are not told exactly how to play it. You know how much certain combinations of fruits will win you, and you know which buttons to press because they flash, but the features are not explained.

Part, if not all, of the fun is finding out what everything does. I never found out what Party Time does. Sounds good though.

Holds come fairly regularly, with a single keypress cancel, and there is also a Mega Hold that hits you randomly. Here the reels slowly move about a little bit, giving you a wider choice of fruits to hold.

When you run out of credits (notice I say "when" not "if" – again, just like the real thing) you are cordially invited to insert more coins. Of course, you don't insert real money says he quickly as little bruvver drops a 50p coin down the slots in the top of the monitor.

Fruit Machine Simulator also features some nice intro music, crisp voice synthesis, and a Best Wins Today table. Yes, you can walk away with your winnings, in a manner of speaking, but somehow I doubt if you will. The temptation to have just one more go is just too much.

Authors: The Oliver twins
Price: £1.99 tape



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PIRATES!

Treachery on the High Seas. No, nothing to do with the Gulf war, but the theme of Microprose's first swashbuckling simulation.

Timed nicely to coincide with the 400th anniversary of Sir Francis Drake's game of bowls and the Spanish Armada, you get the chance to escape your mundane 9 to 5 job or 9 to 4 school day and become a buccaneer on the high seas.

The game is set in a variety of historical periods from 1560 to 1700. You can be any of four nationalities and play on four different skill levels. You are also asked what your personal strong points are as a pirate – you can choose between fencing, gunnery, navigation, wit and charm, or medicine.

To start off, you have to join a ship, climb on to the deck and beat the captain at a duel. Once successful, you take command of the ship.

Your adventures begin in port, where you deal with the natives and buy provisions for the voyage ahead. You can also talk to the local governor or the people in the tavern who will ply you with information, not all of which is useful.

Any booty from previous voyages can be sold to the local merchants, and you can sometimes recruit crew from the tavern.

When at sea, the lookout in the crow's nest tells you whenever a ship approaches. If it is of the same nationality, you can ask for information (which is of the same quality as that obtained in port).

If it is an enemy vessel, you can bombard it with cannon fire, board it and defeat the enemy captain in a duel, after which the ship is yours to be plundered or commissioned and sold at the next port of call.

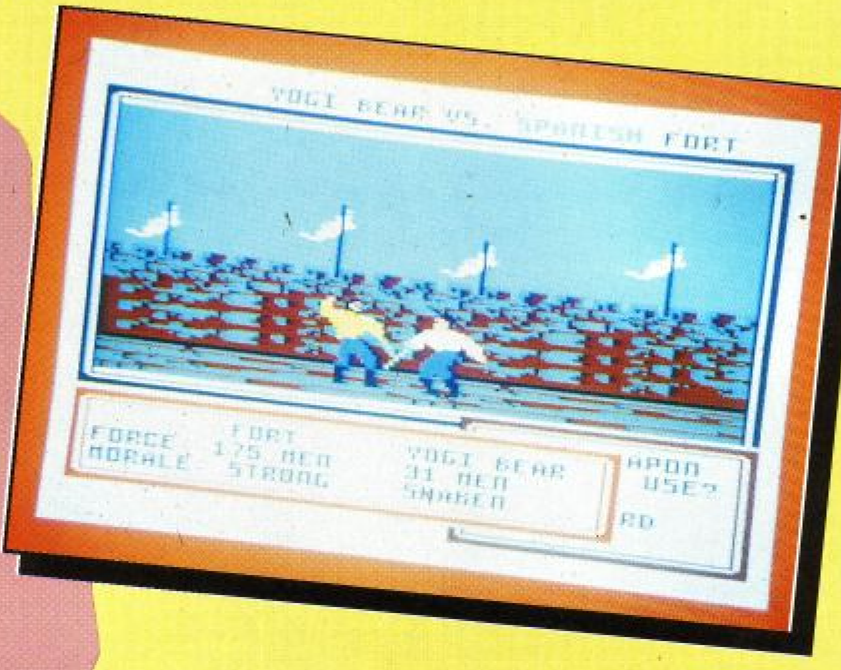
If you're a pacifist or a coward, you can always sail away unscathed.

As well as naval battles there are land battles which tend to be very difficult to win, and stormings of ports which have lots of booty, but are strongly fortified.

When a land battle takes place, the ship's company divides into two or three groups to engage the enemy. Victory or defeat depends on the type of terrain, your tactics, and the morale of each group.

This type of battle is rather like a game of chess, with each side manoeuvring to obtain the upper hand.

As you might expect, the object of the game is to win as many battles as possible, grab as much money as you can and live to a ripe old age in leisurely retirement.



Of course, lots can go wrong on the way: You can run your ship aground, be on the wrong end of a mutiny, or lose a battle or surrender, after which you are imprisoned for several months.

You can retire at any time, but the only time you are forcibly pensioned off is when you are too old to live such an adventurous life – normally after 10 years of active service.

You have helpful friends during the game, who will (tactfully) tell you when you are getting past it.

On retiring, you can record your achievements in a Hall of Fame, which can be saved to disc and reloaded for you to gloat over, and wish you had so much money in real life.

Pirates! is massive, with scores of interconnected sections which have to be loaded in from disc, slowing it down. It's also expensive, but is superbly presented and is very challenging. It should keep you going for months, but do try it out before you buy it.

Author: Stefan Walker for Microprose
Price: £19.95 (6128 disc only)

Nigel

IT took me 10 minutes to find the disc, which was buried under a pile of instruction books, maps, posters, registration cards and other paraphenalia. Once I loaded the game, I was hooked.

This is an original format with enough options to keep Long John Silver busy for years. Mind you, I've never heard of American pirates – the ones here certainly don't speak the Queen's English. "You have gotten into trouble..." ?!?

17/20

Colin

DEVASTATING on the bank account, and bad luck if you haven't got a 6128 – Pirates! won't work on a 464 or 664, even with memory expansion.

I'm not sure about its attempts to run several game formats into one, but it isn't a five minute wonder. Not everyone's cup of tea, but war game lovers should enjoy it.

16/20

Liz

WHAT an odd game. It has a certain similarity to the Mastertronic Magic Knight series of adventure games, with its method of making choices from pull-down menus, but it also contains arcade sequences like the sword fights, and land battles as in war games. I have never seen anything like it before.

16/20



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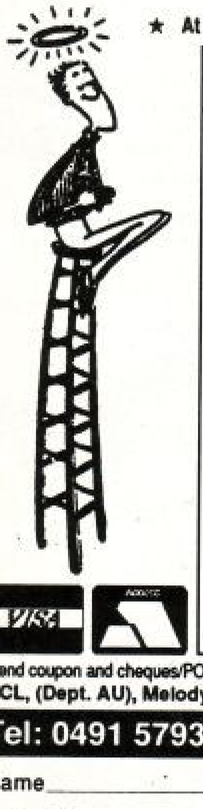
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The word from on high

Vax goes up in the world to bring you more lofty pokes

HELLO again, Hackfans. Never guess where I'm writing from now? Well, this month we're skulking in the attic, complete with cobwebs, old furniture, a hissing water tank, and a few startled starlings. Oh yes, the cats too; they've got designs on the starlings (in the shape of tooth marks), but Sol is more liable to disappear through the ceiling of the room below than chew on a fresh starling drumstick.

Still, there is enough light in here to read your letters, including my first ever bit of hate mail (that isn't meant to be encouragement), from someone in Wolverhampton. They want to start up a Children Against Hackers group. I have half a mind to resign, but then that's all it takes.

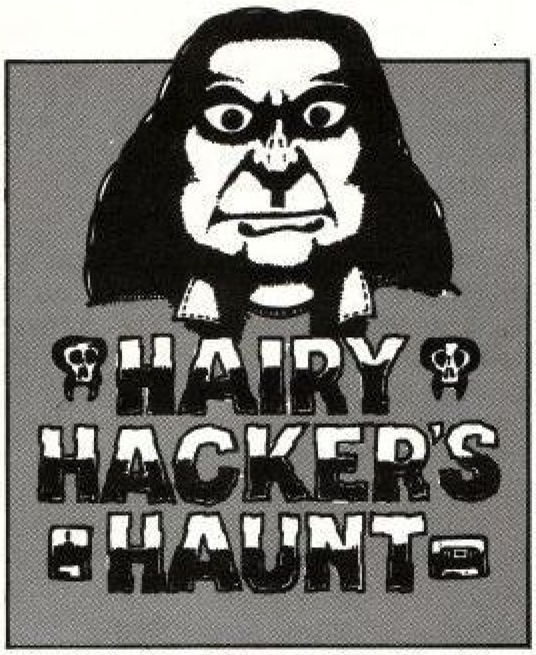
The Ozzies have managed to produce some more civilised literary talent – someone who appreciates the column. Krache of Sydney Down Under has got two pokes, and here they are.

The first is for Fairlight on der flippen floppen dischken thingen. This is one of the shorter pokes in existence, but requires a fast ESC finger. You RUN"DISC as normal, and wait for the pretty screen to load up. As soon as the screen stops loading, hammer away on the ESC key until you get the Ready prompt. Type: POKE &6F7F,&C9:POKE &68E8,&C9:CALL &9380 and hit Enter.

You should now have infinite lives and be able to see all screen drawing. However, you still snuff it if you fall off the drawbridge ("He fallen in de water!").

Krache seems to like Fairlight, 'cos he's given another pokette which steps you up and down through the screen locations, also on the flippen floppen dischkenwhatevers.

It's not perfect, as sometimes you are unable to do anything in some locations. Being teleported off into sections of code was not what the designers had in mind. Also, you tend to lose whatever the inventory pointer is pointing at when you teleport (this is known as a bug). There is no check to stop you from going above or below the existing location numbers, but it doesn't crash if you don't overdo it.



When the game is running with this wee pokeykins in, you can shift on to the next location by hitting the "use item" key (that's 8) and then the f9 key. By using 8 and f6, you can move backwards. Of course screens do not always follow in sequential order, but they're good enough for Krache to have mapped the whole game for himself, and to find where most of the items are. Anyways, yur 'tiz:

Run that little lot, stick in yer Fairlight disc, and then hit the spacebar as requested.

I hear that back issues of *ACU* are the negotiable currency down under, so I'll whisper in the Ed's ear and see if we can't ship you a few of the ones lying about in the office.

Power for Fife

Ain't it amazing what you find while lofting about in the roof? Here is the TV cable running to that noisy set owned by my neighbours (I won't mention names, let's just say that they're one of those sorts that watches the late night/early morning film, at full volume). Next to it is the mains wiring for my bedroom. Shall I?

Nah. It'd run up my electricity bill. Mind you, our old friend Adam Todd of famous Fife must have a mighty big electrickery bill judging from the state of the pile of poke he's sent in.

His Agent X II was written before the last one, honest. The only espionage that went on was the plot of the game (it's in there somewhere, probably on unenlarged microfilm). He put an awful lot of work into it, and the mystery password now displays the horrible multi-colour mega-message, so I'm going to hold on to it pending popular demand. Write in if you want to see it.

His Ninja hack has such a neat user-friendly bug that I've just got to include it: If your opponent hits you when your life line is low, he hurts himself, so your score goes up!

```
10 MEMORY &7FFF:tot=0
20 FOR b=&8000 TO &806E
30 READ a$:c=VAL("&"+a$)
40 POKE b,c:tot=tot+c:NEXT b
50 IF tot<>&20E6 THEN PRINT"ERRROR":ST
   OP
60 CALL &6000
70 DATA 21,40,1f,11,00,08,3e,16,cd,a1,
   bc,f3,21
80 DATA 32,80,11,56,1f,01,09,00,ed,b0,
   21,3b,80
90 DATA 11,52,06,01,34,00,ed,b0,21,40,
   1f,11,00
100 DATA bf,01,52,06,ed,b0,21,06,bf,e5
    ,c9,11,40
110 DATA 00,01,52,05,04,c5,05,21,6b,06
    ,11,a2,02
120 DATA 01,1b,00,ed,b0,21,81,02,36,cd
    ,23,36,a4
130 DATA 23,36,02,c3,40,00,18,20,21,c3
    ,97,22,2f
140 DATA 59,3e,71,32,31,59,af,21,1e,59
    ,77,23,77
150 DATA 32,24,59,2a,b0,00,c9
```

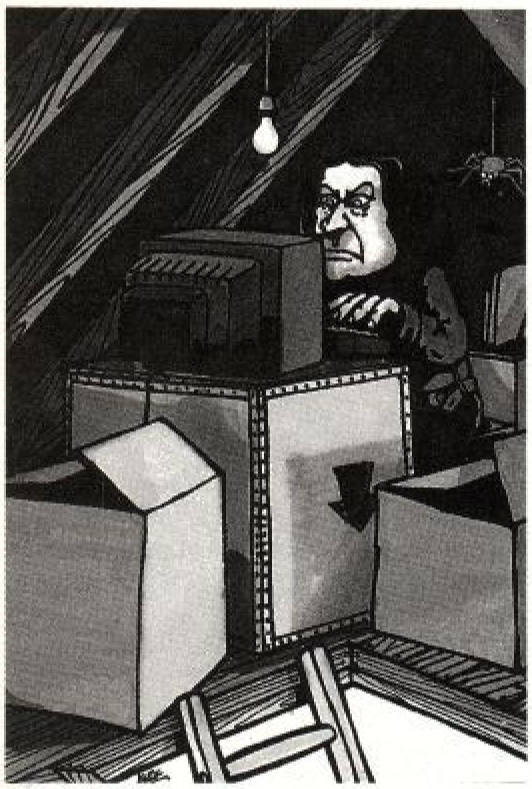
Checksums are included for the hard of typing. The best checksum error I saw was in the R&D department of a certain electronics firm. It said: "Errir roading s#stim RIM.....". I digress, as has become natural for someone paid by the page, from telling you more about the game.

You collect six shields before a door will open in the grey wall leading to Akuma's chamber. There you get the seventh shield, and return to Torii by the sea. Cue the flashing screen: "Welcome home the mighty conqueror".

His Xevious poke is still lacking truly infinite lives, so we'll give him a while longer on that one. Couldn't you nobble the hit effect table, Adam? That would fix the objects that register more than five hits.

The Infiltrator poke is very nice, and makes the game much more playable (like you make it past

```
1 REM Krache's Fairlight hack
10 tt=0:FOR a=&A000 TO &A044
20 READ d$:d=VAL("&"+d$)
30 POKE a,d:tt=tt+d:NEXT a
40 IF tt<>7182 THEN PRINT "Got it wron
   gg again !!? Check the data":END
45 KEY DEF 47,1,159:KEY 159,"run"+CHR$
   (13)
50 CLS:LOCATE 1,15:PRINT "PRESS SPACE
   BAR":PEN 0
60 DELETE 10-120
70 DATA 21,7f,6f,36,c9,21,e8,68,36,c9,
   21
80 DATA 19,a0,11,52,7c,01,2c,00,ed,b0,
   cd
90 DATA 80,93,c9,cd,47,7d,3a,01,83,cb,
   5f
100 DATA 28,0a,cb,67,20,15,fd,35,34,fd
    ,35
110 DATA 34,fd,34,34,06,00,70,23,70,cd
    ,d2
120 DATA 76,e1,c3,95,6e,dd,7e,0c,e6,0f
    ,00,00,00,00
130 OPENOUT "d":MEMORY &27C:MODE 1:INK
    0,0:INK 2,25:INK 3,6:BORDER 0
140 LOAD "fcp.bin":CALL &A000
```



the first part). It's a multi-load poke, so Adam has good reason to be proud of it:

```
10 MEMORY &39AE:LOAD "":tot=0
20 FOR b=&9000 TO &9059
30 READ a$:c=VAL("&"+a$)
40 POKE b,c:tot=tot+c:NEXT b
50 IF tot<>&22D5 THEN PRINT "ERRROR AG
   ANE":STOP
60 CALL &903B
70 DATA 21,69,c6,11,0f,f6,01,69,e6,22,
   68,02
80 DATA ed,53,b2,02,ed,43,20,03,f1,f3,
   c9,af
90 DATA 32,0a,3b,32,4e,68,32,34,68,32,
   4c,65
100 DATA 32,6e,62,32,a0,3a,c3,00,6d,21
    ,be,cd
110 DATA 22,00,67,3e,c9,32,25,67,c3,f4
    ,65,21
120 DATA 17,90,11,20,bf,01,32,00,ed,b0
    ,3e,c3
130 DATA 21,00,90,32,e2,39,22,e3,39,21
    ,ff,ab
140 DATA 11,40,00,c3,af,39
```

The tape itself is in four parts, (the same thing happened to me once when my Sony Walkman broke down), the first part being a helicopter shoot-em-up, but with an armourclad helicopter and unlimited missiles.

Next bit has five locked rooms in it which unlock when you put a pass card in the control room. Photograph the rooms that you unlock, and hope your boss remembered to put film in the camera.

The third part is much the same as the first, and in the fourth and final bit, you have fun in the lab. The pass card opens up the lab, which contains an invisibility pill. Blow up the lab and rescue the doctor, but look out for the mines, as they can still get you.

Well done Adam, we'll send you the usual bribes.

On a slightly less gamesey note, Richard Evans of Dyfed has sent in two pokettes for the disc version of Print Master. Not the public domain poster designer one, but the one by Siren that pumps out various fonts in quad density graphics on an Epson on yer 464.

Unfortunately, this little package always underlines in black. This is a fat lot of use to man and beast when you are printing in inverse, 'cos the background is black already, innit.

Enter the first pokette, Program I, which patches the MCODE.BIN file so that underlining is always in the same colour as the text. The poker includes a checksum and won't write anything until the checksum matches, but make a backup in case of acts of God.

The second bit, Program II, again fiddles about with the MCODE.BIN, and in so doing tacks a couple of new RSXs on the end, NLQ and PITCH. Any idiot with two brain cells to rub together is going to be able to work out what these do, so get typing.

That'll create a new file called NEWMCODE.BIN, which is a wee bit bigger than the original MCODE.BIN, so any memory-tight programs might cause problems. Look out for the absence of bars in front of commands too; both me and the typesetting department have this awful habit of leaving them off. *(Not so – it's our file transfer program that zaps them. Ed).*

The command |NLQ,1 switches on the something-not-unlike-somewhere-near-letter-quality mode, and |NLQ,0 turns it off again. This only affects text sent to the printer via the |LPRINT command. More on the PITCH command a little later.

To load in both the new RSXs and the normal Print Master ones, use a program looking like this:

```
5 MEMORY &93FF
10 LOAD "newmcode.bin",&A000
20 LOAD "standard",&9400
30 CALL &A000
```

Slightly modified there (you got the MEMORY address wrong, Richard), but basically all his own work.

The idea of them is that some of the fonts are a bit thin and seedy- looking; |PITCH,12 packs 12 characters to the inch and PITCH,15 gives the usual 15. To create the new size extra spaces are added between letters, but these do not take into account anything you may have done with underlining and/or inverting.

Both of the new RSXs work with the SIZE text, and all the other RSXs.

As you'll probably want to use the new commands in the Ascprint program, here are the changes to allow the new commands to work from that. Change line 30 to read:

```
30 MEMORY 32767:LOAD "newmcode",&A000:
LOAD "standard",&9400:CALL &A000:LO
AD "sdump",&9000:LOAD "qcode5.bin"
```

and add these two new lines:

```
535 IF LEFT$(a$,4)="NLQ" THEN NLQ,VA
    L(MID$(a$,6,1))
536 IF LEFT$(a$,6)="PITCH" THEN PITC
    H,VAL(MID$(a$,8,2))
```

Richard's last program was a Maxam to Basic loader program. Nice, but we're working on one that checksums the listing both ways and spots missing lines. It will be published in due course for all you lot to use. Thanks many Richard.

In the meantime, do not hesitate to send in your self-checksummed listings, however large, to me at the Hacker's Haunt at ACU.

Now then, while I pop down the loft ladder to hack into a chunk of pre-frozen chilli and slip it in the microwave, you can hack into Justin's latest, aka:

```
1 ' Flying Shark disc Justin
2 ' Insert disc and run routine.
10 MODE 1:OPENOUT "d":MEMORY &3FF
20 tot=0
30 FOR n=&BE00 TO &BE2C
40 READ a$:a=VAL("&"+a$)
50 POKE n,a:tot=tot+a
60 NEXT n
70 IF tot<>3150 THEN PRINT"Whoops, you
   had better check the data.":END
80 INPUT "Insert Flying Shark disc and
   hit return.",a$
90 LOAD "disc":CALL &BE00
100 DATA 21,47,04,11,00,10,01,20
110 DATA 00,ed,b0,3e,c9,12,32,47
120 DATA 04,cd,00,04,cd,00,10,21
130 DATA 20,be,22,e3,04,c3,67,04
140 DATA 21,00,00,22,70,3b,22,71
150 DATA 3b,c3,00,c0,4a
```

```
1 ' North Star tape Justin
2 ' PASTE[R]
10 MODE 1:MEMORY 12345
20 tot=0
30 FOR n=&80 TO &9D
40 READ a$:a=VAL("&"+a$)
50 POKE n,a:tot=tot+a
60 NEXT n
70 IF tot<>1497 THEN PRINT"Theres some
thing wrong with the data.":END
80 LOAD "",&4100
90 CALL &80
100 DATA 21,00,41,11,00,01,01,00
110 DATA 02,ed,b0,21,94,00,22,05
120 DATA 01,c3,00,01,21,00,18,22
130 DATA 0c,29,c3,84,03,4a
```

Solly has been in the freezer again: I can tell 'cos the fast-freeze compartment is filled up with mice cubes. No matter, see you next month, and remember: July 4th is Independence of America Day.

```
10 'PrintMaster ULINE & INVERT fix
20 'R.J.Evans 17-3-88
30 '
40 CLS
50 PRINT "Place PrintMaster disk in dr
   ive A and" 60 INPUT "then press
return
   ",dummy$
70 A :LOAD "mcode.bin",&A000
80 FOR addr= &A0D1 TO &A0DD
90 READ d$ : POKE addr,VAL("&"+d$)
100 total = total +VAL("&"+d$)
110 NEXT addr
120 IF total <>&48C THEN 160 'error
130 SAVE "mcode",b,&A000,&14C
140 PRINT "data OK _ saved new version
    to disc"
150 END
160 PRINT "there is an error in the da
    ta _ no"
165 PRINT "alterations made to disk."
170 PRINT "Correct the data and run ag
    ain"
180 END
190 DATA 7e,4f,3a,4c,a1,b1,4f,3a,14,a1
    ,a9,00,00
```

Program I

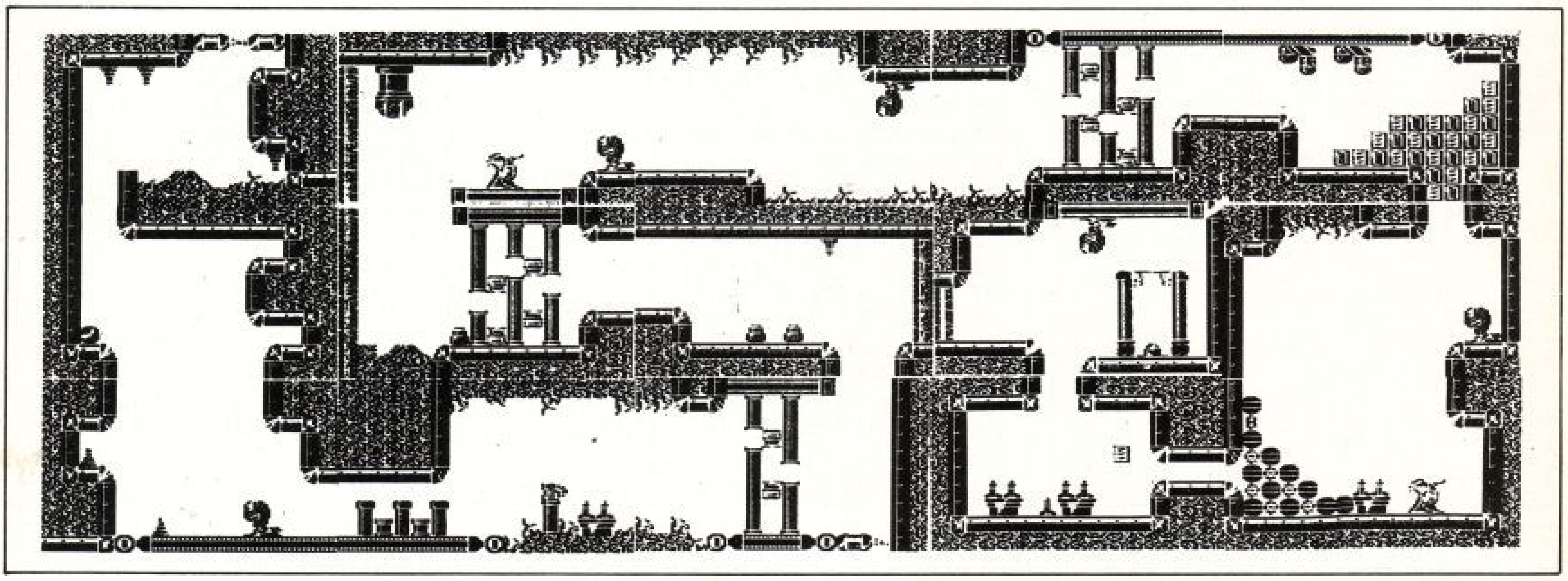
```
10 'Basic poker program to give two
20 'new rsx commands to Print Master.
30 '
40 'The new commands are:
45 '
50 ' NLQ,n n=1 (on) or 0 (off)
60 ' PITCH,m m=12 or 15
65 '
70 'R.J.Evans 31-3-88
80 '
100 MEMORY &9FFF : LOAD "mcode",&A000
110 DEFINT a-z
120 FOR block=1 TO 14
130 PRINT "reading block ";block;CHR$(
13);
140 READ addr:READ length:sum=0
150 IF length<0 THEN GOSUB 250 ELSE GO
SUB 300
160 READ check
170 IF sum<>check THEN GOTO 220
180 NEXT block
190 PRINT "data OK-saving file as NEWM
CODE.BIN"
200 SAVE "newmcode.bin",b,&A000,&278,&
    A000
210 END
220 'error in data
230 PRINT "There is a checksum error i
    n block ";block
240 END
250 FOR i=0 TO ABS(length)-1
260 POKE i+addr,0
270 NEXT i
280 RETURN
290 '
300 FOR i=0 TO length-1
310 READ byte$:num=VAL("&"+byte$)
320 POKE addr+i,num:sum=sum+num
330 NEXT i
340 RETURN
350 'block 1
360 DATA &a00e,2,4d,a1,238
370 'block 2
380 DATA &a01c,6,c3,32,a2,c3,45,a2,833
390 'block 3
400 DATA &a022,-17,0
410 'block 4
420 DATA &a063,3,cd,9b,a1,521
430 'block 5
440 DATA &a066,-9,0
450 'block 6
460 DATA &a08b,5,cd,9b,a1,18,18,569
470 'block 7
480 DATA &a090,-24,0
490 'block 8
500 DATA &a0d1,13,7e,4f,3a,4c,a1,b1,4f
510 DATA 3a,14,a1,a9,00,00,1164
520 'block 9
530 DATA &a0f5,4,cd,6b,a1,00,473
540 'block 10
550 DATA &a14b,77,00,00,4c,50,52
560 DATA 49,4e,d4,49,4e,56,45,52
570 DATA d4,53,49,5a,c5,55,4c,49
580 DATA 4e,c5,4e,4c,d1,50,49,54
590 DATA 43,c8,00,d5,c5,3a,7a,a1
600 DATA 47,e5,d1,05,19,10,fd,c1
610 DATA d1,c9,10,cd,bb,a0,c5,e5
620 DATA 3a,9a,a1,fe,00,28,10,47
630 DATA 3a,4c,a1,4f,3a,14,a1,a9
640 DATA cd,2b,bd,30,f3,10,f1,e1,8922
650 'block 11
660 DATA &a198,64
670 DATA c1,c9,00,c5,e5,3a,31,a2
680 DATA fe,01,28,43,3a,12,a1,fe
690 DATA 00,28,05,cd,0a,a2,18,03
700 DATA cd,fc,a1,e5,c5,cd,e9,a0
710 DATA 21,29,a2,06,04,cd,b1,a0
720 DATA 21,0a,a1,06,04,cd,b1,a0
730 DATA c1,e1,3a,12,a1,fe,00,28
740 DATA 05,cd,0a,a2,18,03,cd,fc,7392
750 'block 12
760 DATA &a1d8,64
770 DATA a1,cd,e9,a0,21,2e,a2,06
780 DATA 03,cd,b1,a0,e1,c1,c9,3a
790 DATA 12,a1,fe,00,28,05,cd,0a
800 DATA a2,18,03,cd,fc,a1,cd,e9
810 DATA a0,e1,c1,c9,c5,e5,7e,d6
820 DATA 20,cd,7b,a1,23,10,f7,e1
830 DATA c1,c9,c5,e5,3a,4b,a1,32
840 DATA 4c,a1,7e,fe,20,20,07,3e,8669
850 'block 13
860 DATA &a218,64
870 DATA 00,32,4c,a1,3e,20,d6,20
880 DATA cd,7b,a1,23,10,e6,e1,c1
890 DATA c9,1b,4a,01,0d,0a,1b,6a
900 DATA 01,01,3d,c0,dd,7e,00,fe
910 DATA 01,28,05,fe,00,28,01,c9
920 DATA 3c,32,31,a2,c9,3d,c0,dd
930 DATA 7e,00,fe,0f,28,05,fe,0c
940 DATA 28,13,c9,3e,10,32,7a,a1,6045
950 'block 14
960 DATA &a258,32
970 DATA af,32,9a,a1,3e,78,32,f0
980 DATA a0,32,3e,a0,c9,3e,14,32
990 DATA 7a,a1,3e,04,32,9a,a1,3e
1000 DATA 60,32,f0,a0,32,3e,a0,c9,3572
```


How to join: See Page 43

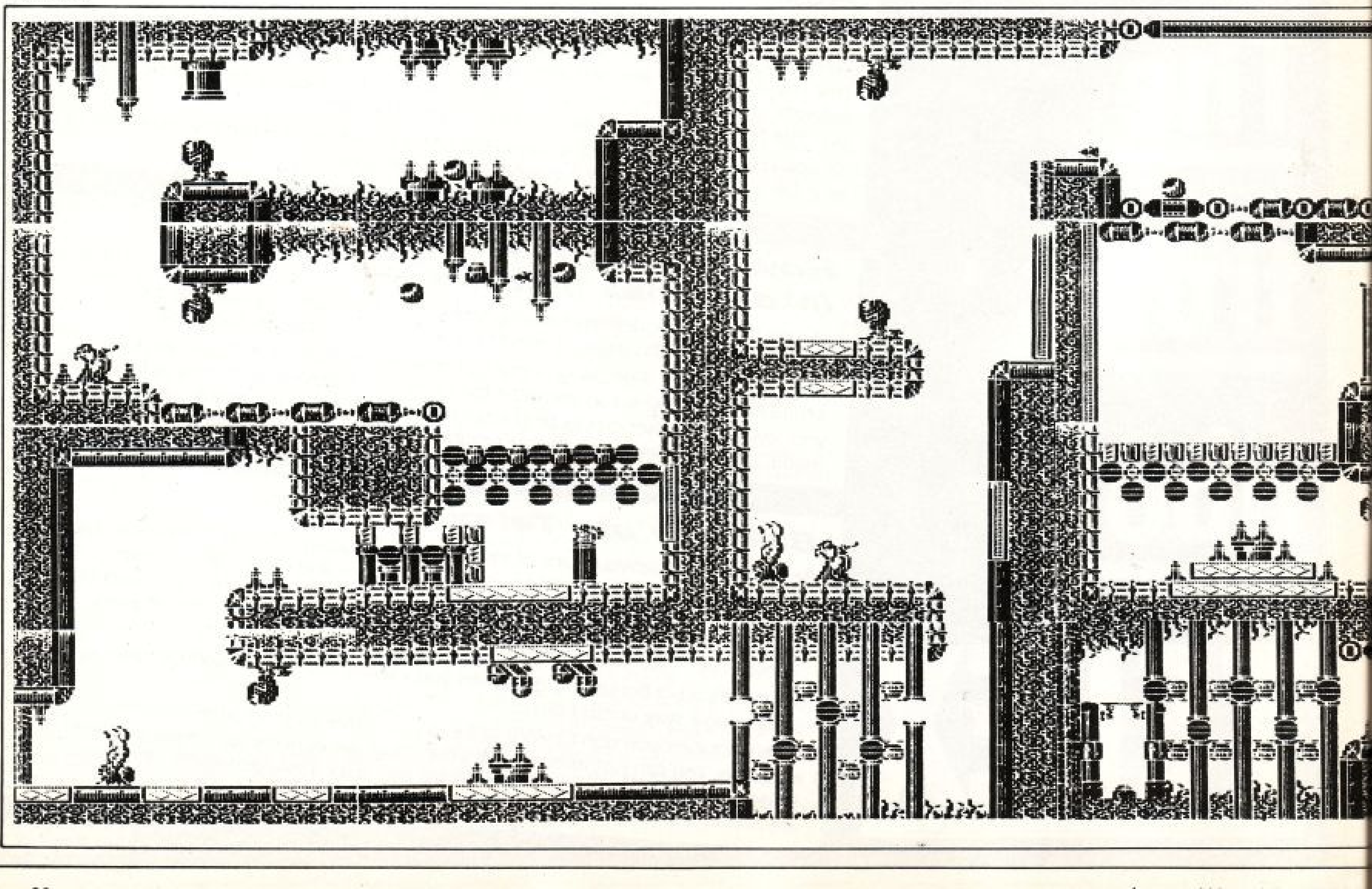
CYBERNOID THE FIGHTING MACHINE

The Map

Level 1



Level 3



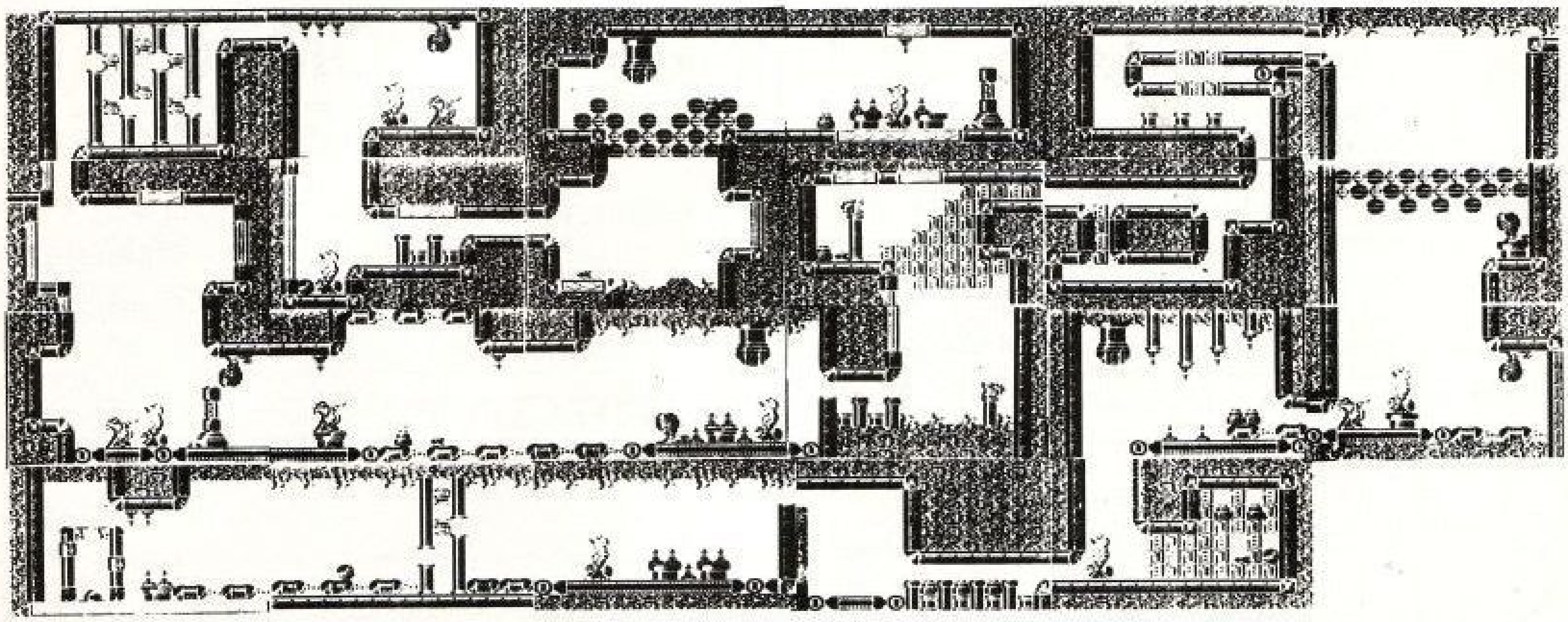
To aid you in your task you have a variety of weapons, including missiles, seeker missiles, bombs, bouncing bombs and mines.

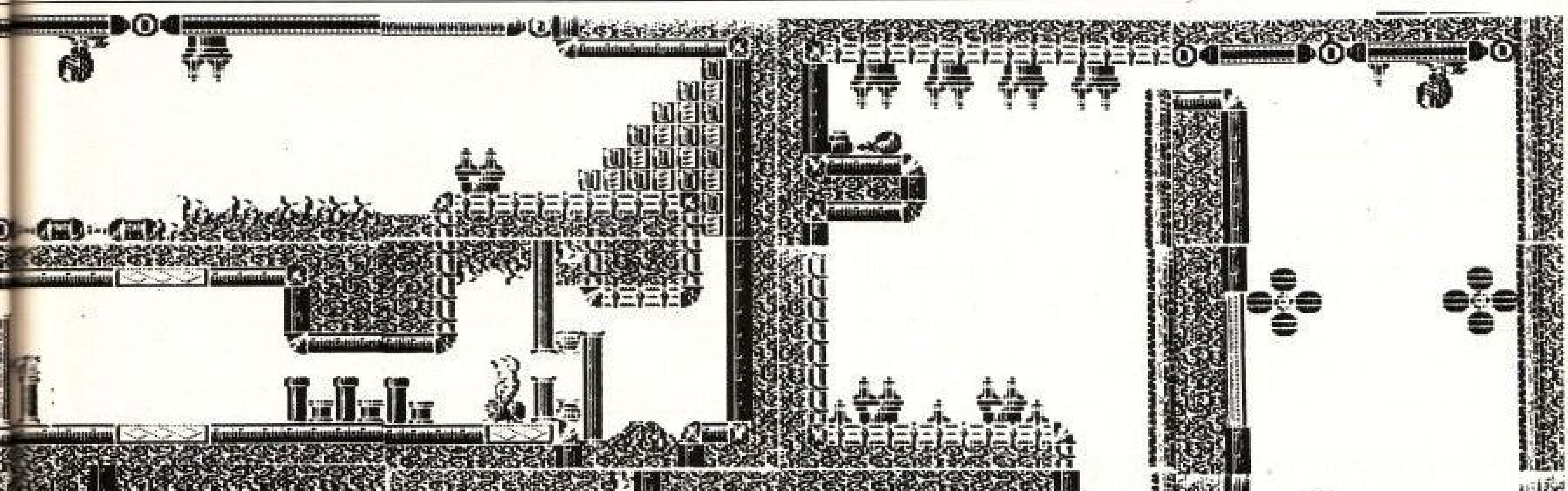
In each room there is a different type of bug with hostile intentions towards you. Each is best disposed of with a particular weapon. Zap them and they sometimes transmute. Pick up the new shapes for extra weapons, energy, time or points.

Most rooms contain a problem to solve. You may have to pass unscathed through some machinery, or duck and dive past missiles being hurled at you by an indestructible enemy placement.

A final word of warning: Save your shield until you reallly need it!

Level 2





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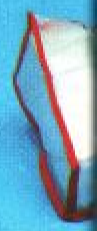
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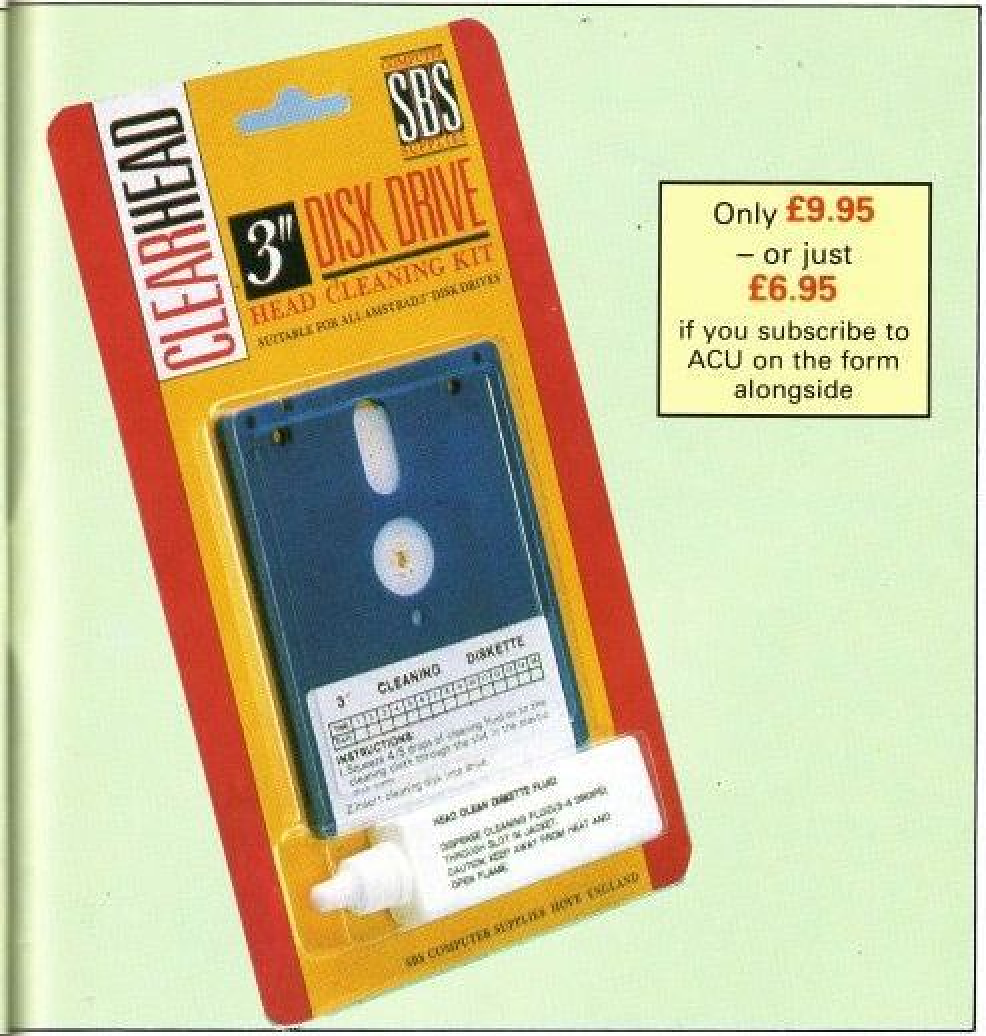
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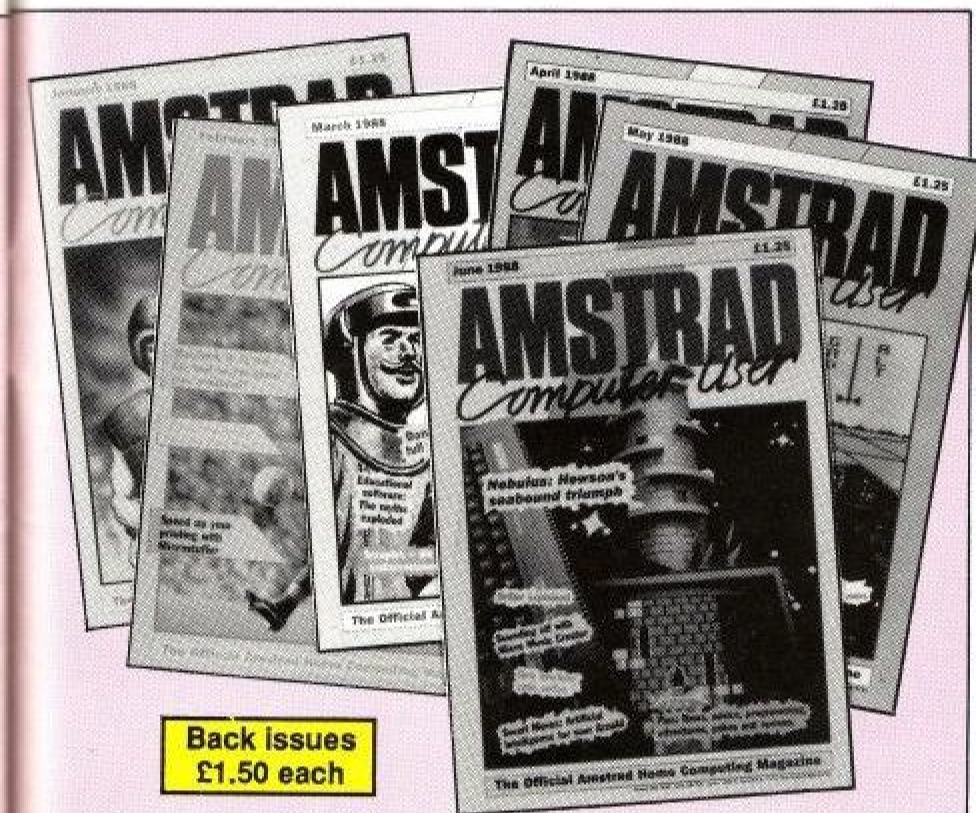
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The Least Significant Bit

NOT content with his Wogan appearance, Alan Sugar has made a further bid for superstardom with the DTI advertisements to promote British forays into the European market. Alan is uncharacteristically restrained thanks to the script having been written for him and his not having time to learn the lines until the day of the shoot.

The whole thing was filmed double quick while the workmen stopped hammering away at Amstrad's new reception. Strange really, some bits of the Amstrad building haven't seen a lick of paint since the day the company moved from Tottenham and yet this is the third reception facelift in three years.

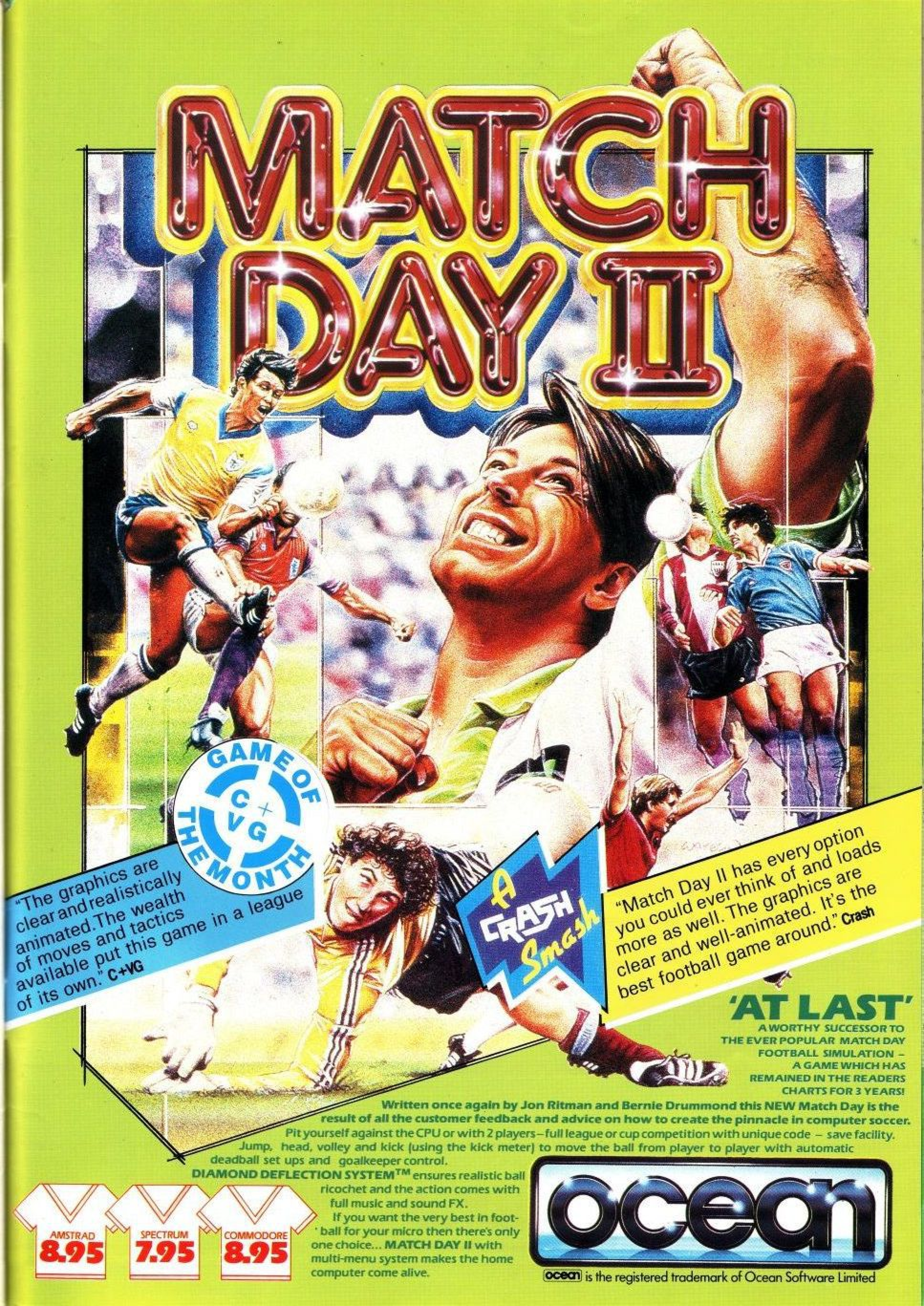
In the DTI advertisement Alan Sugar complains about the problems of having to design different computers for different markets. What he forgets to say is that even in 1992 the continentals won't have learnt English and will insist on having the manuals in their own language.

LSB has heard of an Amstrad compromise. The European machine should have a French AZERTY keyboard, meet German radio emission standards and come with an Esperanto manual.

Hacker artist hacked

Our best wishes go to John "Alex" Alexander the artist who illustrates the Hairy Hackers Haunt and many of the articles. We hope the broken arm is soon on the mend. And our worst possible wishes to the driver of the car which hit him on a Zebra crossing.

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